

Hammersmith and Fulham Council Air Quality Annual Status Report for 2022

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This report provides a detailed overview of air quality in Hammersmith and Fulham Council during 2022. It has been produced to meet the requirements of the London Local Air Quality Management (LLAQM) statutory process¹.

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¹ LLAQM Policy and Technical Guidance 2019 (LLAQM.TG(19))

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Abbreviations

Abbreviation	Description
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
BEB	Buildings Emission Benchmark
CAB	Cleaner Air Borough
EV	Electric Vehicle
GLA	Greater London Authority
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LLAQM	London Local Air Quality Management
NRMM	Non-Road Mobile Machinery
PM ₁₀	Particulate matter less than 10 micron in diameter
PM _{2.5}	Particulate matter less than 2.5 micron in diameter
TEB	Transport Emissions Benchmark
TfL	Transport for London
NO ₂	Nitrogen Dioxide

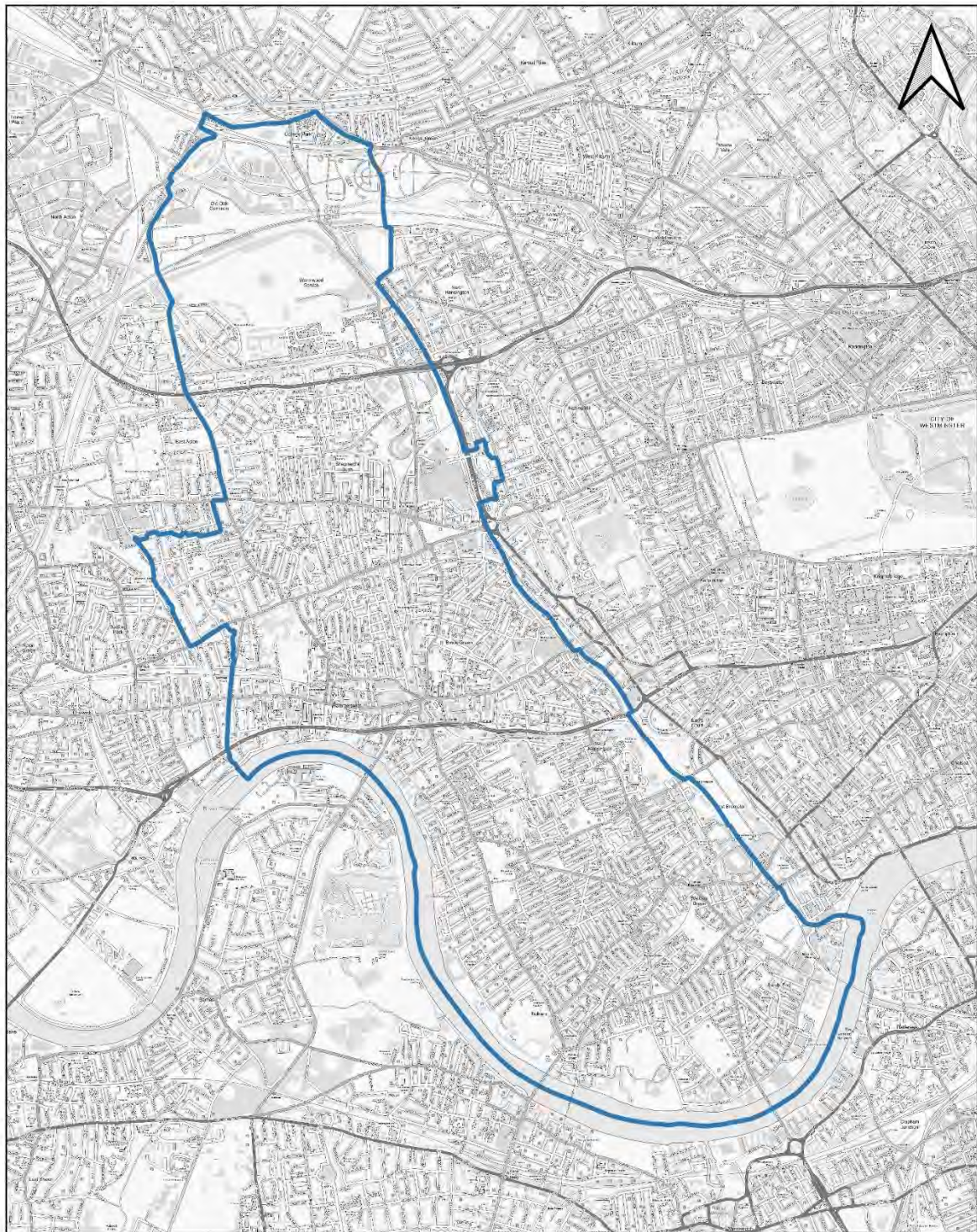
Table A. Summary of National Air Quality Standards and Objectives


Pollutant	Standard / Objective (UK)	Averaging Period	Date ⁽¹⁾
Nitrogen dioxide (NO ₂)	200 µg m ⁻³ not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
Nitrogen dioxide (NO ₂)	40 µg m ⁻³	Annual mean	31 Dec 2005
Particles (PM ₁₀)	50 µg m ⁻³ not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
Particles (PM ₁₀)	40 µg m ⁻³	Annual mean	31 Dec 2004
Particles (PM _{2.5})	20 µg m ⁻³	Annual mean	2020
Particles (PM _{2.5})	Target of 15% reduction in concentration at urban background locations	3-year mean	Between 2010 and 2021
Sulphur dioxide (SO ₂)	266 µg m ⁻³ not to be exceeded more than 35 times a year	15-minute mean	31 Dec 2005
Sulphur dioxide (SO ₂)	350 µg m ⁻³ not to be exceeded more than 24 times a year	1-hour mean	31 Dec 2004
Sulphur dioxide (SO ₂)	125 µg m ⁻³ not to be exceeded more than 3 times a year	24-hour mean	31 Dec 2004

Notes:

(1) Date by which to be achieved by and maintained thereafter

Figure 1: AQMA Boundary (Entire Borough)



Legend
AQMA Boundary 

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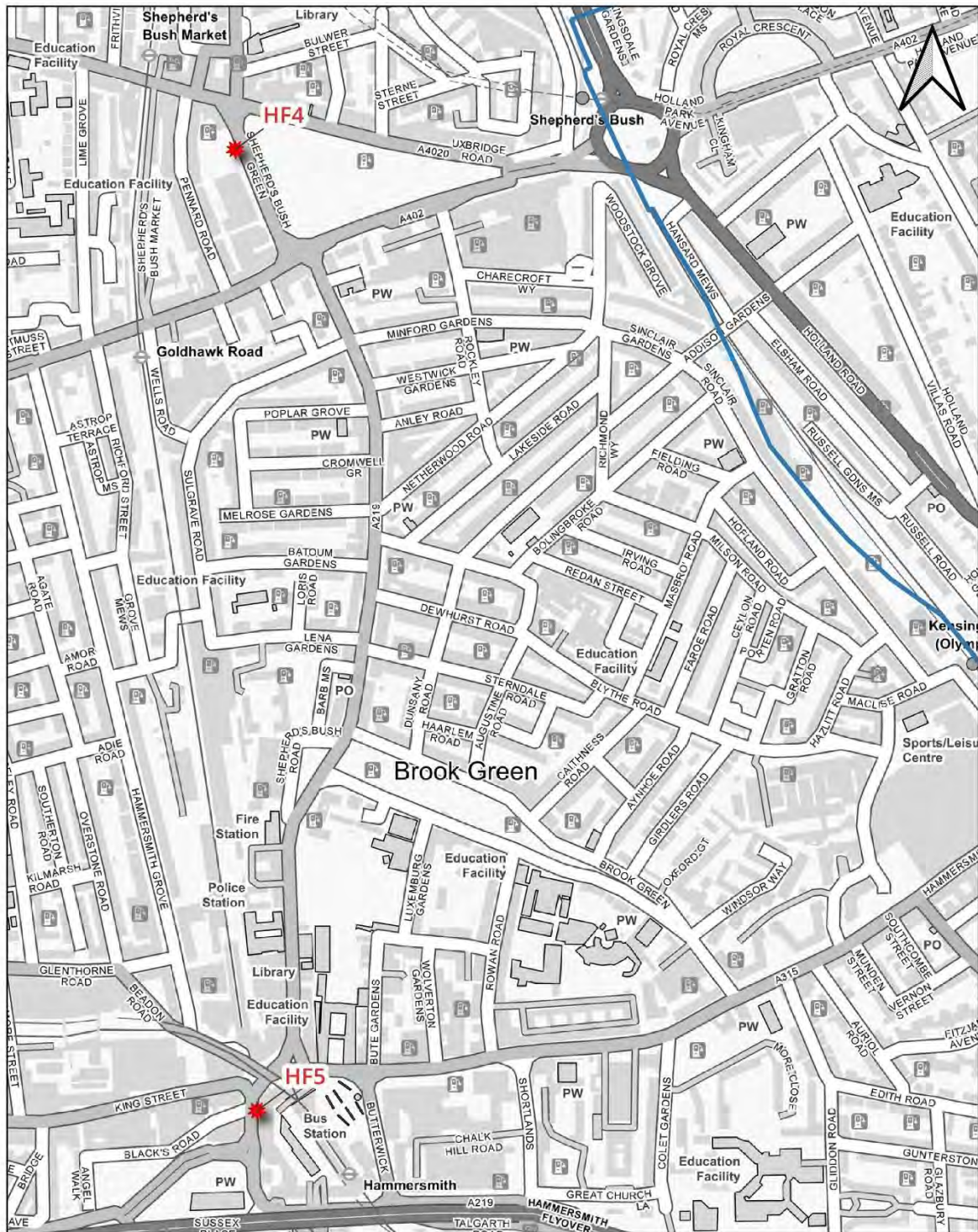
1. Air Quality Monitoring

1.1 Locations

Table B. Details of Automatic Monitoring Sites for 2022

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
HF4	Shepherd's Bush	532313	179900	Roadside	Y	6	2	2	NO ₂ , PM ₁₀ , PM _{2.5}	Chemiluminescent; TEOM for PM ₁₀ until 23/11/2021 and then Continuous Beta attenuation Particulate Monitor (BAM) for PM ₁₀ and PM _{2.5}
HF5	Hammersmith Town Centre	523343	178567	Roadside	Y	3.7	1.2	2.3	NO ₂ , PM ₁₀ , PM _{2.5} and O ₃	Chemiluminescent; Continuous Beta attenuation Particulate Monitor (BAM) for PM ₁₀ and PM _{2.5} , UV absorption

Figure 2: Automatic Monitoring Locations



Legend

- AQMA Boundary ▭
- Automatic Monitoring Locations ★

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Table C. Details of Non-Automatic Monitoring Sites for 2022

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
HF01	Bagleys Lane	525760	176732	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF02	Townmead Road	526146	176205	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF03	Wandsworth Bridge Road	525819	175810	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF04	Hugon Road	525652	175821	Urban Background	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF05	Fulham High Street	524406	175969	Roadside	Hammersmith and Fulham AQMA	5.0	2.0	2.5	NO ₂	No
HF06	New Kings Road	524846	176325	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF07	Fulham Road	524633	176585	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF08	Dalling Road	522642	178727	Roadside	Hammersmith and Fulham AQMA	7.0	1.0	2.5	NO ₂	No
HF09	Paddenswick Road	522606	179008	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
HF10	Brook Green Road	523856	178863	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF11	Hammersmith Road (west)	523436	178632	Roadside	Hammersmith and Fulham AQMA	0.0	5.0	2.5	NO ₂	No
HF12	Greyhound Road	524065	177863	Roadside	Hammersmith and Fulham AQMA	2.0	1.0	2.5	NO ₂	No
HF13	Hammersmith Bridge Road	523129	178331	Roadside	Hammersmith and Fulham AQMA	21.0	3.0	2.5	NO ₂	No
HF14	King Street	522777	178551	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF15	Hemlock Road	522089	180927	Roadside	Hammersmith and Fulham AQMA	6.0	17.0	2.5	NO ₂	No
HF16	Wood Lane	523305	180176	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF17	Coningham Road	522693	179595	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF18	Goldhawk Road	522220	179281	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF19	Askew Road	522006	179760	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No

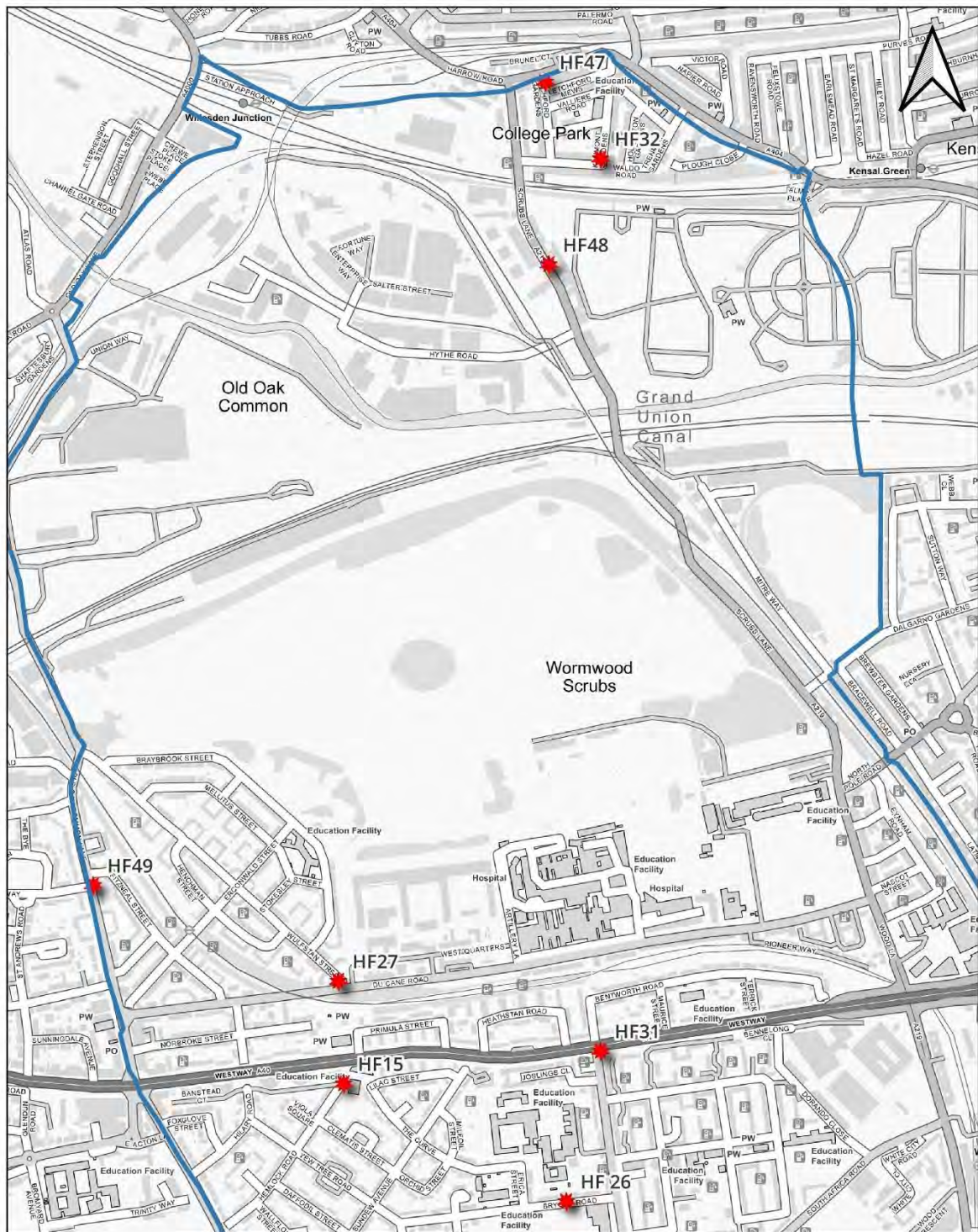
Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
HF20	Lefroy Road	521564	179685	Urban Background	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF21, HF22, HF23	Shepherd's Bush AQMS	523313	179900	Roadside	Hammersmith and Fulham AQMA	6.0	2.0	2.5	NO ₂	Yes
HF24	Lillie Road	525155	177918	Roadside	Hammersmith and Fulham AQMA	8.0	1.8	2.5	NO ₂	No
HF25	Eel Brook Common	525386	176816	Urban Background	Hammersmith and Fulham AQMA	45.0	32.0	2.5	NO ₂	No
HF26	Bryony Road	522480	180655	Urban Background	Hammersmith and Fulham AQMA	8.0	1.0	2.5	NO ₂	No
HF27	Du Cane Road	522535	181160	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF28	Lillie Road	524647	177657	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF29	Fulham Broadway	525273	177273	Roadside	Hammersmith and Fulham AQMA	3.0	4.7	2.5	NO ₂	No
HF30	Addison Gardens	523801	179498	Urban Background	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF31	Bloemfontein Road	522550	180963	Roadside	Hammersmith and Fulham AQMA	5.0	3.0	2.5	NO ₂	No

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
HF32	Valliere Road	522550	182790	Urban Background	Hammersmith and Fulham AQMA	4.0	1.0	2.5	NO ₂	No
HF33	Uxbridge Road	522850	180060	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF34	Cardross Street	522745	179179	Urban Background	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF35	Talgarth Road	524148	178358	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF36	North End Road	524747	178158	Roadside	Hammersmith and Fulham AQMA	3.7	1.0	2.5	NO ₂	No
HF37	Fulham Palace Road (south)	523926	176940	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF38	Filmer Road	524486	176874	Roadside	Hammersmith and Fulham AQMA	4.0	1.0	2.5	NO ₂	No
HF39	Butterwick (a)	523529	178470	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF40	Hammersmith Grove	523050	179549	Roadside	Hammersmith and Fulham AQMA	8.0	1.0	2.5	NO ₂	No
HF41, HF42, HF43	Hammersmith Town Centre (AQMS)	523343	178567	Roadside	Hammersmith and Fulham AQMA	1.5	1.5	2.3	NO ₂	Yes

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
HF44	Shepherds Bush Road	523687	178446	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF45	Maclise Road	523705	178448	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF46	Hammersmith Road (east)	524339	178914	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF47	Harrow Road	522437	182947	Roadside	Hammersmith and Fulham AQMA	2.0	1.0	2.5	NO ₂	No
HF48	Scrubs Lane	522444	182573	Roadside	Hammersmith and Fulham AQMA	3.0	1.0	2.5	NO ₂	No
HF49	Old Oak Common Lane	521511	181302	Roadside	Hammersmith and Fulham AQMA	3.5	1.5	2.5	NO ₂	No
HF50	Munster Road	524453	176796	Roadside	Hammersmith and Fulham AQMA	2.0	1.0	2.5	NO ₂	No
HF51	Dawes Road	524652	177283	Roadside	Hammersmith and Fulham AQMA	4.0	1.0	2.5	NO ₂	No
HF52	Harwood Road	525417	177168	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF53	Imperial Road	525856	176763	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA? If so, which AQMA?	Distance to Relevant Exposure (m)	Distance to Kerb of Nearest Road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor. (Y/N)
HF54	Waterford Road	525827	176921	Roadside	Hammersmith and Fulham AQMA	2.0	1.0	2.5	NO ₂	No
HF55	Hurlingham Road	524659	176050	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF56	Parsons Green Lane	525062	176623	Roadside	Hammersmith and Fulham AQMA	1.5	1.0	2.5	NO ₂	No
HF57	Glenthorne Road	523077	178767	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF58	St Peters Road	522299	178472	Roadside	Hammersmith and Fulham AQMA	5.0	1.0	2.5	NO ₂	No
HF59	North End Road	525053	177530	Roadside	Hammersmith and Fulham AQMA	2.5	1.0	2.5	NO ₂	No
HF60	Fulham Palace Road (north)	523625	177883	Roadside	Hammersmith and Fulham AQMA	3.3	5.0	2.8	NO ₂	No

Figure 3: Diffusion Tube Monitoring north of A59 Westway



Legend



- AQMA Boundary
- Diffusion Tube Locations ★

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Figure 4: Diffusion Tube Monitoring south of A40 Westway

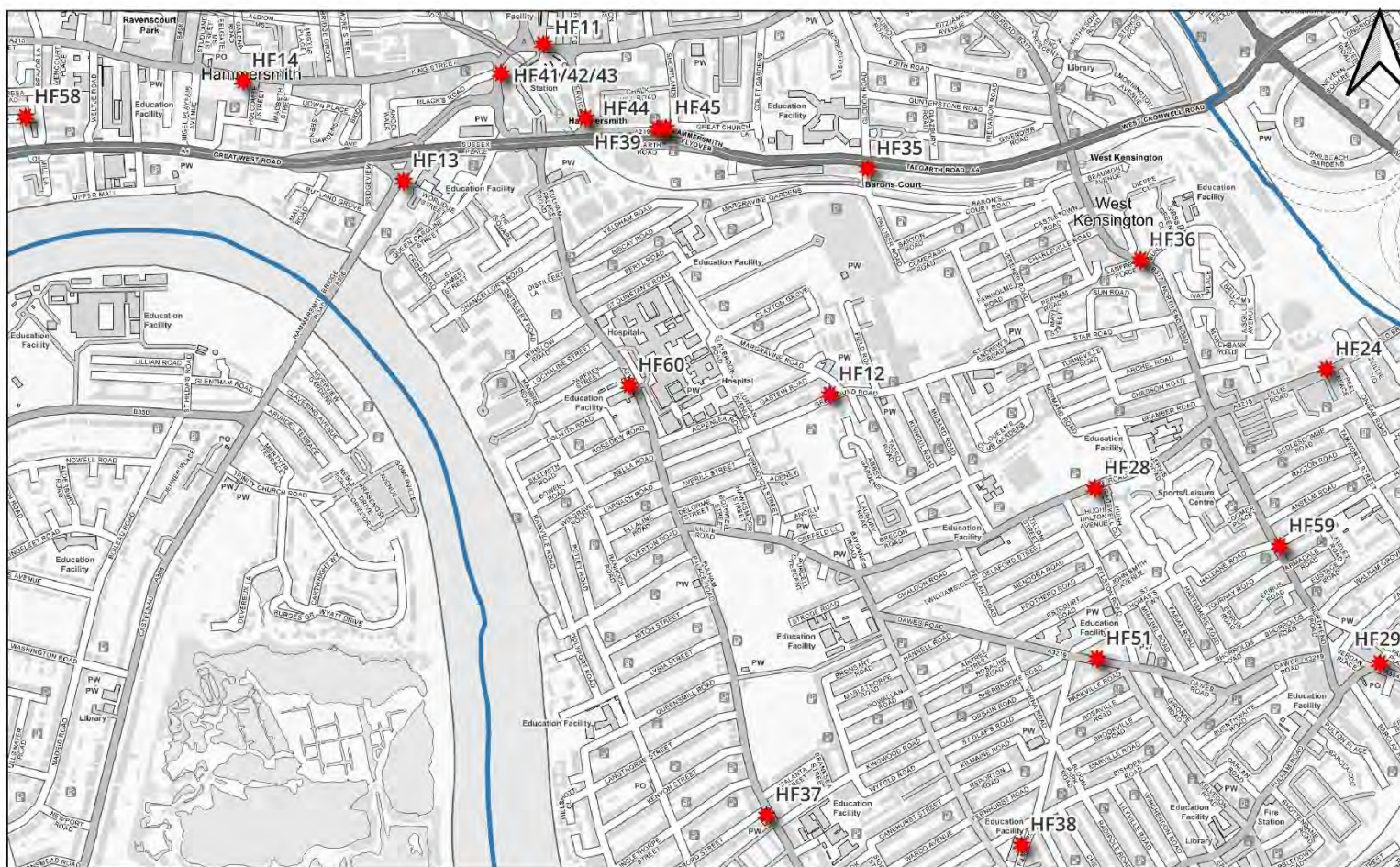


Legend



- AQMA Boundary 
- Diffusion Tube Locations 

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Figure 5: Diffusion Tube Monitoring Locations around Hammersmith Flyover

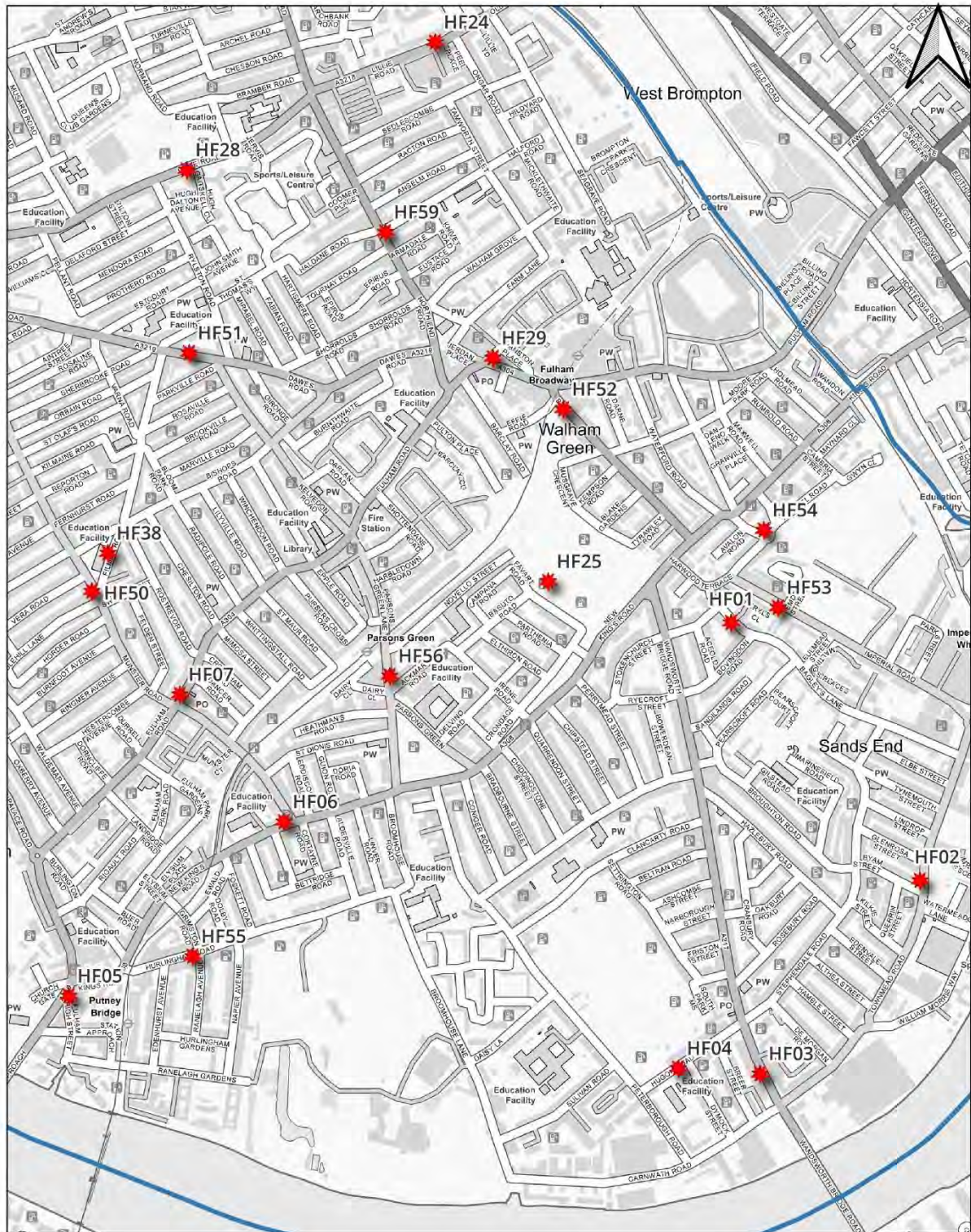


Legend

- AQMA Boundary 
- Diffusion Tube Locations 

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Figure 6: Diffusion Tube Monitoring in the South of the Borough



Legend

- AQMA Boundary
- Diffusion Tube Locations

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1.2 Comparison of Monitoring Results with AQOs

The results presented are after adjustments for “annualisation” and for distance to a location of relevant public exposure (if required), the details of which are described in Appendix A.

Table D. Annual Mean NO₂ Ratified and Bias-adjusted Monitoring Results

Site ID	Site type	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022	2022 distance corrected
HF4	Automatic	90.5	90.5	78.9	77.0	71.0	60	43	41	35	34.8
HF5	Automatic	81.1	81.1	-	-	-	53	37	44	45	39.4
HF01	Roadside	75.3	75.3	-	37.4	33.1	36.7	22.7	23.2	19.2	
HF02	Roadside	75.3	75.3	-	47.5	46.9	49.2	28.9	26.5	24.6	
HF03	Roadside	75.3	75.3	-	87.1	74.3	76.9	54.7	48.2	46.3	37.3
HF04	Urban Background	58.0	58.0	-	30.0	27.6	28.3	18.6	18.5	16.2	
HF05	Roadside	90.4	90.4	-	54.3	53.1	48.8	38.6	40.9	45.9	33.0
HF06	Roadside	90.4	90.4	-	56.3	45.5	46.8	28.9	30.7	26.2	
HF07	Roadside	90.4	90.4	-	61.0	53.4	59.6	39.8	42.4	41.0	35.7
HF08	Roadside	82.7	82.7	-	-	-	-	-	-	15.0	
HF09	Roadside	90.4	90.4	-	44.4	42.2	35.5	25.5	30.4	27.4	
HF10	Roadside	90.4	90.4	-	35.7	32.0	31.3	20.2	22.5	21.6	
HF11	Roadside	83.2	83.2	-	78.6	74.8	69.1	43.1	46.0	41.0	
HF12	Roadside	82.7	82.7	-	-	-	-	-	-	18.8	
HF13	Roadside	74.7	74.7	-	64.1	48.4	35.8	27.5	24.7	20.5	
HF14	Roadside	90.4	90.4	-	60.1	51.9	53.8	38.8	44.7	30.0	
HF15	Roadside	90.4	90.4	-	-	-	-	-	-	19.0	
HF16	Roadside	90.4	90.4	-	58.9	51.5	51.2	33.2	48.6	42.2	40.0
HF17	Roadside	90.4	90.4	-	40.2	35.3	36.1	22.6	25.1	21.7	
HF18	Roadside	80.8	80.8	-	60.8	49.3	38.6	24.2	27.7	25.1	
HF19	Roadside	90.4	90.4	-	57.5	50.1	49.7	32.5	33.3	32.3	
HF20	Urban Background	90.4	90.4	-	31.4	30.3	32.2	18.4	19.7	18.6	

Site ID	Site type	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022	2022 distance corrected
HF21, HF22, HF23	Roadside	90.4	90.4	-	-	<u>64.4</u>	58.1	38.6	32.8	35.0	
HF24	Roadside	59.9	59.9	-	-	-	-	-	-	24.5	
HF25	Urban Background	90.4	90.4	32.7	31.9	26.2	26.7	17.5	17.8	17.7	
HF26	Urban Background	90.4	90.4	39.6	36.7	31.2	32.4	18.3	20.7	19.9	
HF27	Roadside	90.4	90.4	-	-	-	-	-	-	27.6	
HF28	Roadside	90.4	90.4	52.3	44.8	41.7	40.5	25.8	29.8	26.9	
HF29	Roadside	90.4	90.4	68.3	56.3	47.8	53.9	34.5	34.8	32.6	
HF30	Urban Background	90.4	90.4	38.2	42.1	31.5	34.3	22.3	26.2	22.2	
HF31	Roadside	90.4	90.4	84.3	76.8	68.1	59.6	38.3	43.3	36.2	33.1
HF32	Urban Background	90.4	90.4	-	-	-	-	-	-	23.1	
HF33	Roadside	90.4	90.4	49.4	42.6	38.7	37.3	23.1	25.7	23.5	
HF34	Urban Background	90.4	90.4	34.4	37.0	27.4	28.2	17.9	20.7	18.6	
HF35	Roadside	82.7	82.7	59.8	50.9	47.4	44.2	27.5	29.7	26.8	
HF36	Roadside	82.7	82.7	-	58.8	54.2	51.8	41.1	33.5	27.9	
HF37	Roadside	90.4	90.4	68.6	53.0	48.3	50.8	32.0	38.8	36.2	30.0
HF38	Roadside	59.9	59.9	-	-	-	-	-	-	24.5	
HF39	Roadside	90.4	90.4	-	-	69.4	60.5	37.6	44.3	39.2	35.8
HF40	Roadside	90.4	90.4	-	-	-	-	22.4	20.1	18.1	
HF41, HF42, HF43	Roadside	90.4	90.4	-	-	-	-	43.8	44.1	47.5	44.8
HF44	Roadside	90.4	90.4	-	-	-	-	23.2	27.7	24.6	
HF45	Roadside	90.4	90.4	-	-	-	-	22.7	26.0	25.3	
HF46	Roadside	72.0	72.0	-	-	-	-	41.3	45.5	41.1	37.4
HF47	Roadside	82.7	82.7	-	-	-	-	25.4	28.1	26.3	

Site ID	Site type	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022	2022 distance corrected
HF48	Roadside	90.4	90.4	-	-	-	-	31.4	35.6	30.6	
HF49	Roadside	82.7	82.7	-	-	-	-	25.9	29.8	30.8	
HF50	Roadside	90.4	90.4	-	-	-	-	26.4	26.0	24.3	
HF51	Roadside	90.4	90.4	-	-	-	-	26.8	28.9	28.2	
HF52	Roadside	90.4	90.4	-	-	-	-	50.8	46.4	42.5	36.2
HF53	Roadside	66.5	66.5	-	-	-	-	21.6	24.3	20.7	
HF54	Roadside	75.3	75.3	-	-	-	-	22.4	21.0	18.7	
HF55	Roadside	90.4	90.4	-	-	-	-	18.4	23.5	19.6	
HF56	Roadside	90.4	90.4	-	-	-	-	24.8	29.1	26.3	
HF57	Roadside	90.4	90.4	-	-	-	-	-	27.0	22.8	
HF58	Roadside	90.4	90.4	-	-	-	-	-	21.1	19.2	
HF59	Roadside	90.4	90.4	-	-	-	-	-	25.5	24.8	
HF60	Roadside	56.6	56.6	-	-	-	-	-	40.1	34.0	

Notes:

The annual mean concentrations are presented as $\mu\text{g m}^{-3}$.

Exceedances of the NO₂ annual mean AQO of $40 \mu\text{g m}^{-3}$ are shown in **bold**.

NO₂ annual means in excess of $60 \mu\text{g m}^{-3}$, indicating a potential exceedance of the NO₂ hourly mean AQS objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias.

All means have been “annualised” in accordance with LLAQM Technical Guidance if valid data capture for the calendar year is less than 75% and greater than 25%.

Results have been distance corrected where applicable.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

Figure 7: Graph of annual mean NO₂ diffusion tube monitoring in the north of the Borough

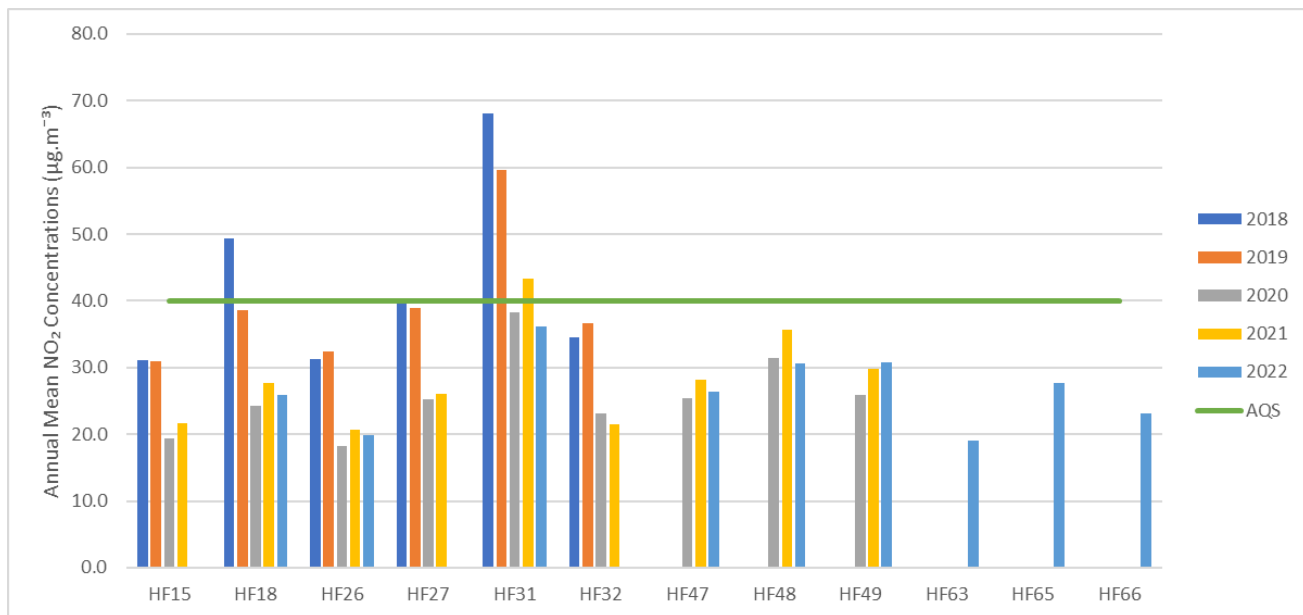


Figure 8: Graph of annual mean NO₂ diffusion tube monitoring south of the A40 Hammersmith Westway

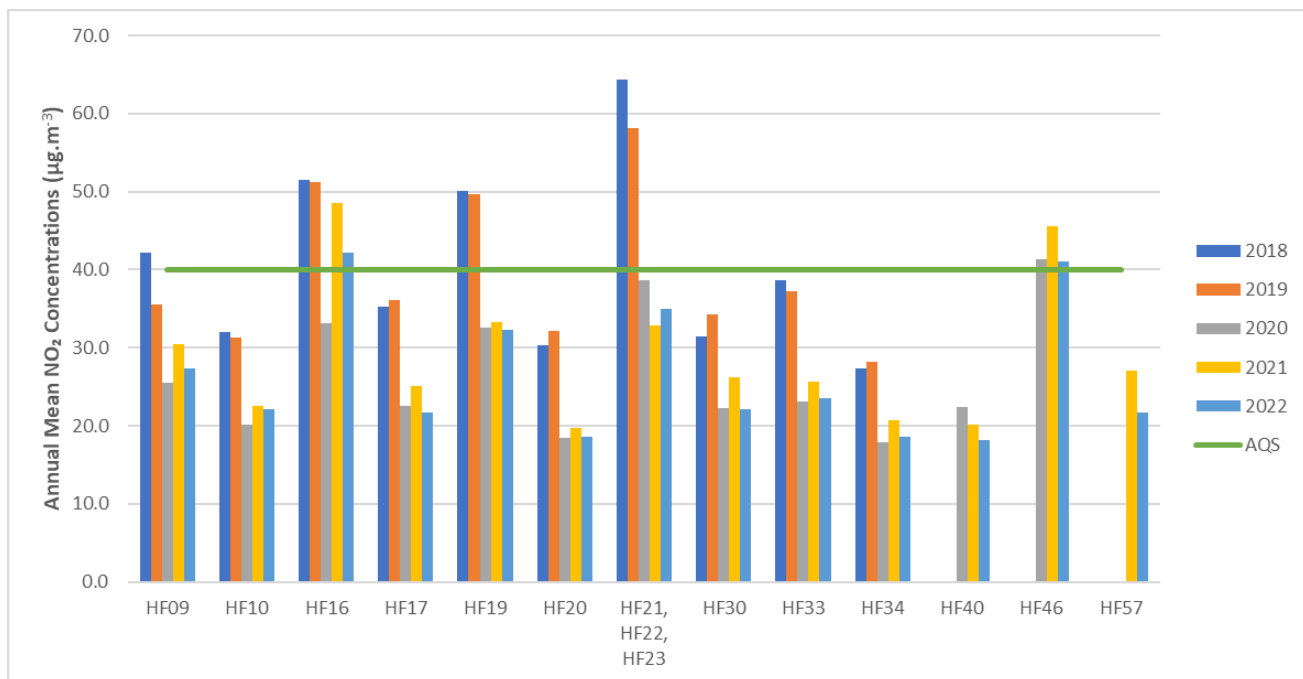


Figure 9: Graph of annual mean NO₂ diffusion tube monitoring south of the Hammersmith Flyover

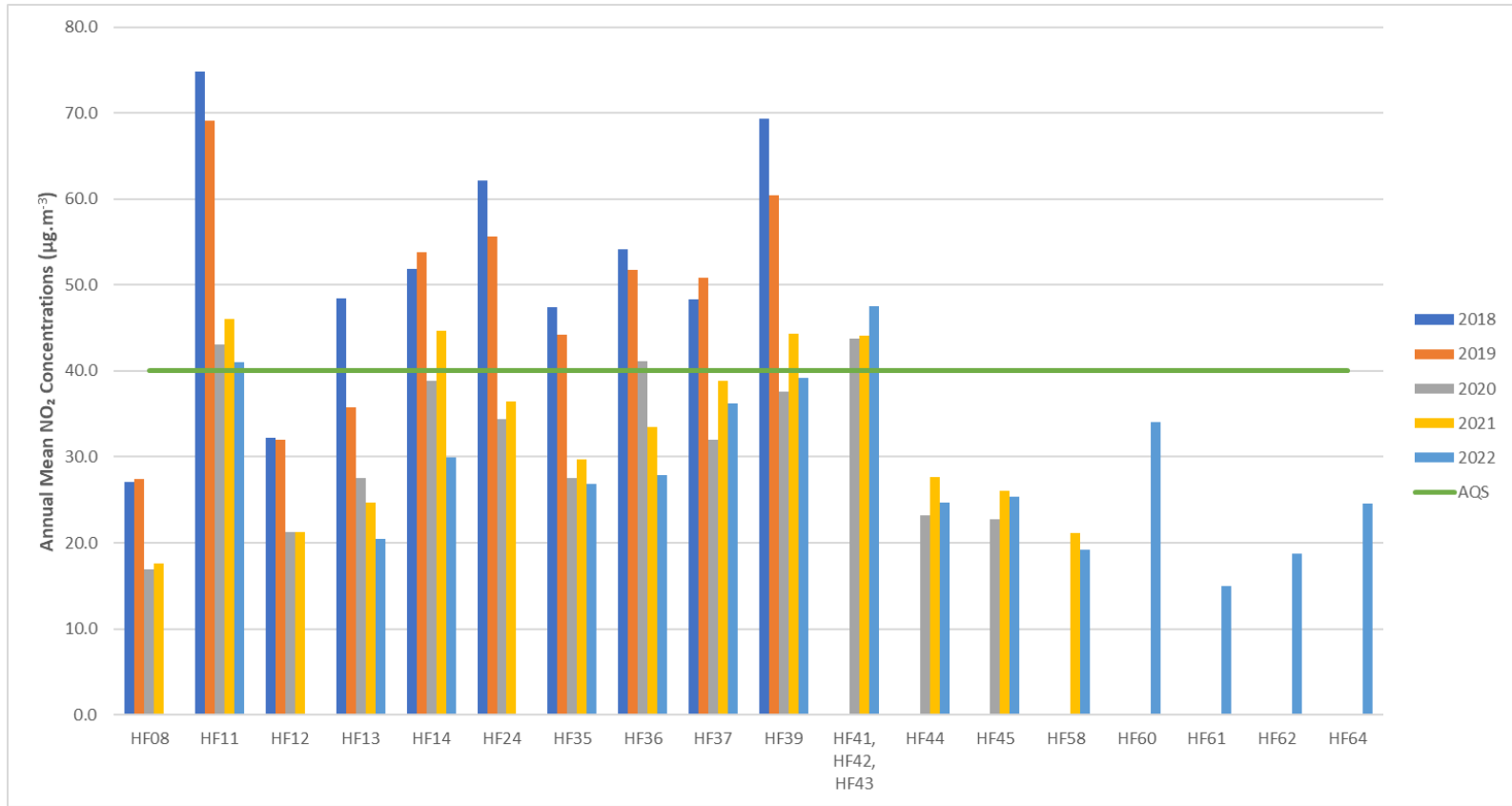
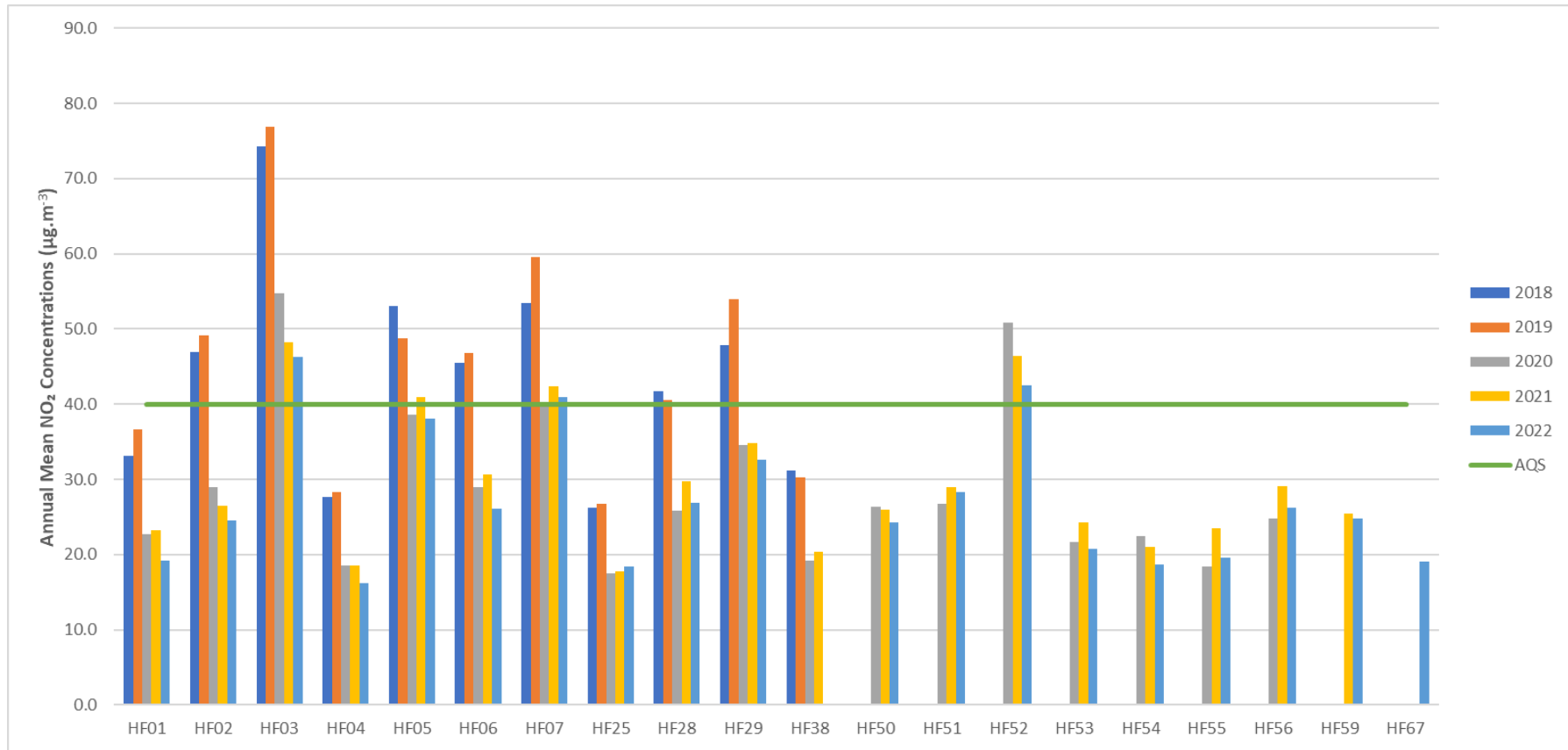


Figure 10: Graph of annual mean NO₂ diffusion tube monitoring in the south of the borough



Nitrogen Dioxide (NO₂)

During 2022, Hammersmith and Fulham Council commenced monitoring of six diffusion tubes in new locations as marked in Table C, six monitoring locations from 2021 were not continued in 2022. Monitoring data at eight of the sixty diffusion tubes sites and one automatic monitoring site (HF5) recorded an exceedance of the annual mean NO₂ AQS objective in 2022. This is a reduction from twelve diffusion tubes and both automatic monitoring sites, recording exceedances in 2021.

One monitoring location recording an exceedance in 2022 also recorded an increase in concentration in from 2021. This site is the triplicate site and automatic monitor at the Hammersmith Town Centre AQMS (HF40/41/42). The majority of diffusion tube monitoring sites recorded lower concentrations in 2022 than 2021. Three passive sites recorded increased concentrations in 2022 including HF21/22/23, HF40/41/42 and HF49 and in addition the automatic monitoring site HF5 also showed an increase in concentrations in 2022. This may be due to increased traffic flows in 2022 compared to the previous two years as 2022 was the first year where Covid-19 lockdown restrictions were not enforced since 2020.

Table E. NO₂ Automatic Monitoring Results: Comparison with 1-hour Mean Objective, Number of 1-Hour Means > 200 µg m⁻³

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
HF4	90.5	90.5	33	20	8	4	0	0	0
HF5	80.1	80.1	-	-	-	2	1	2	7

Notes

Results are presented as the number of 1-hour periods where concentrations greater than 200 µg m⁻³ have been recorded.

Exceedance of the NO₂ short term AQO of 200 µg m⁻³ over the permitted 18 hours per year are shown in **bold**.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

(b) Data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

Table F. Annual Mean PM₁₀ Automatic Monitoring Results (µg m⁻³)

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
HF4	98.0	98.0	27.4	38.0	26.4	25	28	34	38.8
HF5	73.1	73.1	-	-	-	22	19	19	22.5

Notes

The annual mean concentrations are presented as µg m⁻³.

Exceedances of the PM₁₀ annual mean AQO of 40 µg m⁻³ are shown in **bold**.

All means have been “annualised” in accordance with LLAQM Technical Guidance if valid data capture is less than 75% and more than 25%.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) Data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

Table G. PM₁₀ Automatic Monitoring Results: Comparison with 24-Hour Mean Objective, Number of PM₁₀ 24-Hour Means > 50 µg m⁻³

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
HF4	98.0	98.0	17	14	4	11	13	55	74
HF5	73.1	73.1	-	-	-	5	5	1	8 (36.7)

Notes

Exceedances of the PM₁₀ 24-hour mean objective (50 µg m⁻³ over the permitted 35 days per year) are shown in **bold**.

Where the period of valid data is less than 85% of a full year, the 90.4th percentile is provided in brackets.

(a) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

(b) data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

Table H. Annual Mean PM_{2.5} Automatic Monitoring Results (µg m⁻³)

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	2016	2017	2018	2019	2020	2021	2022
HF4	94.3	94.3	-	-	-	-	-	-	13.5
HF5	77.1	77.1	-	-	-	15	14	11	10

Notes

The annual mean concentrations are presented as µg m⁻³.

Exceedances of the PM_{2.5} annual mean AQO of 20 µg m⁻³ are shown in **bold**.

All means have been “annualised” in accordance with LLAQM Technical Guidance, if valid data capture is less than 75% and more than 25%.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) Data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

Table I. Annual Mean O₃ Automatic Monitoring Results (µg m⁻³)

Site ID	Valid data capture for monitoring period %^(a)	Valid data capture 2022 %^(b)	2019	2020	2021	2022
HF5	74.9	74.9	0	2	2	0

Notes

Exceedances of the O₃ objective are shown in bold (8 hour running mean >100 -10 allowed a year).

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) Data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).

2. Action to Improve Air Quality

2.1 Air Quality Action Plan Progress

Table J provides a brief summary of Hammersmith and Fulham Council progress against the Air Quality Action Plan, showing progress made this year.

Table J. Delivery of Air Quality Action Plan Measures

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
1	Cleaner Transport	Reducing Emissions at its source Encourage improved availability of alternative fuels	<ul style="list-style-type: none"> a) The Council has continued its EV infrastructure roll out through collaboration with a number of charge point suppliers, with over 2,500 EV charge points now publicly available across the borough b) Approximately 1,000 new lamp column charge points were delivered up to January 2023. Over 2,200 lamp column charge points have now been installed across the borough, c) The council continues to explore opportunities to develop Rapid Charging in the Borough. We have delivered a total 13, 50 kWh rapid charge points, with another 15 planned for delivery in 2023/24. d) To support future development of a fully electric Car Club fleet in the Borough, we are working directly with Enterprise and Liberty Charge to introduce ‘Car Club Mobility Hubs’ and convert all existing car club vehicles to electric.

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
2	Cleaner Transport	<p>Reducing Emissions at its source</p> <p>Provide incentives for use of alternative fuels</p>	<p>New emissions based charging for pay and display was introduced in March 2023. This still includes a diesel surcharge of £1. The charges are shown at website Emissions based parking charges LBHF</p> <p>50% discount for business and trader permits were introduced for green vehicles, as well as free business permits for fully electric.</p>
3	Delivery Servicing and Freight	<p>Reducing Emissions at its source</p> <p>Promote travel plans to encourage a switch to low emission vehicles</p>	<p>As part of Hammersmith BID MAQF business LEN Project the council engaged with businesses, on developing last mile zero emission delivery schemes. In 2019 H&F launched 'Parcels Not Pollution' a ground-breaking scheme that reduces the number of goods vehicles travelling into and within our town centres. Goods are redirected from source to a freight hub outside of the borough, consolidated and re-delivered by e-cargo-bike for the last mile to customers across the borough. A number of the council's services use the service with plans to support more services, reducing the council's direct emissions.</p> <p>H&F expanded the scope of Parcels Not Pollution this year, working with MP Smarter Travel to deliver a programme encouraging local businesses to switch from cars/vans to cargo bikes. So far, 131 businesses have engaged actively with the project, with 9 conversions from cars/vans to e-bikes. In addition, the programme built valuable relationships with a much wider range of e-cargo bike delivery providers, resulting in one of the largest e-cargo bike logistics companies in the UK, Delivery Mates, creating its first microhub in the borough in 2023. In 2022, H&F won a £277,950 award from Defra to run a three year Parcels Not Pollution programme. This will continue to engage with local businesses as well as building further relations with logistics firms,</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>both to encourage a bigger switch to e-cargo bikes and to significantly increase the uptake of e-cargo bike deliveries in the borough.</p> <p>As part of previous projects Clean Air Villages 2 and 3, The council worked with Zipcar, Business Improvement Districts (BIDs) and Cross River Partnership to launch electric van services for small businesses in Fulham and Shepherds Bush, to reduce air pollution from local businesses. After external funding through the Defra Air Quality Grant ended, the council agreed to fund this service another year. Qualifying businesses can book the vehicles for free at this webpage. Electrifying Fulham Businesses Zipcar.</p> <p>The Shepherds Bush van has 22 businesses using the van, 199 trips were made by these businesses in 2022. 3,707 miles were driven in the van.</p> <p>In Fulham, 17 businesses were involved in the scheme in 2022. 138 trips and 1833 miles were driven in the van.</p> <p>The two park royal vans that were supported by the Council and Old Oak and Park Royal Development Company, were available free of charge to qualifying businesses between April-December 2022 and currently still available free of charge. 13 businesses signed up to use the vans and 409 trips were taken and 10221 miles were driven in the vans. Hire an electric van for free in Park Royal London City Hall</p> <p>Online High Street supported by the Council, encouraging residents to shop from local independent shops. Deliveries are packaged together, with each delivery carbon neutral as the</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>platform works with Packfleet and Zedify who deliver using cargo bikes or electric vans and with efficient routing.</p>
4	Borough Fleet	<p>Reducing Emissions at its source</p> <p>Reduce emissions from the Council fleet</p>	<p>From February 2022, seventy-five percent of the council's ground maintenance vehicles became electric by the end of 2022, along with all handheld tools, to improve air quality as reported at H&F parks go electric to improve air quality and reduce noise LBHF</p> <p>The switch to electric power is also estimated to reduce carbon emissions by 51 per cent. The council's new grounds maintenance contract runs for five years from February 2022 and required the successful company to use a 'green fleet'.</p> <p>Parcels not pollution scheme, an emissions free delivery service, which results from a partnership between Hammersmith and Fulham Council, Hammersmith BID, Transport for London and e-cargo bikes continues to operate across the borough. A number of the council's services use the service with plans to support more services, reducing the council's direct emissions. This includes placing and collecting the council's air quality nitrogen dioxide diffusion tubes from 2020.</p> <p>The council ran Dr Bikes 48 Saturdays across the year from 10am-3pm in parks including Ravenscourt and Normand as well as Furnivall Gardens, outside the Riverside Studios and on Lyric Square. We averaged about 15 bikes per session. We also ran weekend Dr Bikes at events including road closures on North End Road, King Street and Wandsworth Bridge Road. Further, we introduced regular weekly Dr Bikes from midday-2.30pm outside the LBHF temporary offices at 3 Shortlands every Tuesday, outside the Nourish Hub for the first 3</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>Wednesdays of the month and inside West London Welcome refugee centre in Baron's Court on the 4th Wednesday of every month. We averaged between 5-8 bikes at each event. We also introduced monthly Dr Bikes at Imperial College White City, and the NHS Imperial Trust Hospitals - Charing Cross, Hammersmith Hospital and St Marys - in which we averaged between 15-20 bikes per session.</p> <p>With regard to the council's fleet:</p> <ul style="list-style-type: none"> • 62 council vehicles 38% of council fleet vehicles are now electric and 3% hybrid. • All council leased vehicles from last year have been electric vehicles only. This means that vehicles coming to end of their leases are now being replaced by electric vehicles resulting in a greener fleet. • Feasibility study was carried out in Q4 of 2022/23 for depot electrification. • The council is in discussion with the new waste contractor on electrification of the depot by 2025 and usage of alternative fuels to reduce our emissions. Will present options to the senior leadership team to progress. This could include using a direct renewable alternative fuel such as hydrotreated vegetable oil (HVO) as a bridge to electrification. • We are working with the waste contractor to secure electric vehicles where available, e.g., electric bikes, subject to infrastructure requirements. • Users needs are carefully assessed to ensure vehicle is essential before requesting new vehicles. Alternative use of transport is encouraged where possible. • Electric charging infrastructure includes – Bagleys Lane Depot 14 x 7kWh chargers, 3 x 400-volt ERCV charging points in the workshop and 1 x 7kWh charger at Normand

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>Park. The council is investigating remaining electrical charging capacity at depots in lieu of significant works required to increase capacity.</p> <ul style="list-style-type: none"> • In discussion and looking for alternative sites to charge the council's vehicles
5	Cleaner Transport	<p>Reducing Emissions at its source</p> <p>Seek a reduction in emissions from the bus fleet</p>	No update on bus emissions to report this year.
6	Cleaner Transport	<p>Reducing Emissions at its source</p> <p>Encourage the use of vehicles with smaller, more efficient engines</p>	<p>New emissions-based charging for pay and display was introduced in March 2023. This still includes a diesel surcharge of £1. The charges are shown at Emissions based parking charges LBHF.</p> <p>50% discount for business and trader permits were introduced for green vehicles, as well as free business permits for fully electric.</p>
7	Delivery Servicing and Freight	<p>Reducing Emissions at its source</p> <p>Seek to reduce emissions from larger vehicles (Low Emission Zone)</p>	<p>Clean Air Neighbourhoods Programme was approved by cabinet 10th October 2022. The programme “will seek to improve the health of residents through a range of measures and public realm area improvements, including new trees, greening, sustainable drainage systems, pedestrian safety improvements, cycling facilities and traffic access restrictions. It will repurpose street space to be used by the community for play streets, community theatre and resident-led events such as street parties. As part of the broader effort to improve air quality, further measures to tackle energy use and heating demand will also be brought forward. An</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>experimental programme of traffic restrictions will play a key role in achieving Clean Air Neighbourhoods by discouraging out-of-borough traffic from adding to air pollution by using our streets simply to pass through the borough rather than, for example, visit friends or family or make deliveries.”</p> <p>Current Clean Air Neighbourhoods are South Fulham and South Fulham (West).</p> <p>Parcels not pollution scheme, an emissions free delivery service, which results from a partnership between Hammersmith and Fulham Council, Hammersmith BID, Transport for London and e-cargo bikes continues to operate across the borough.</p> <p>H&F expanded the scope of Parcels Not Pollution this year, working with MP Smarter Travel to deliver a programme encouraging local businesses to switch from cars/vans to cargo bikes. So far, 131 businesses have engaged actively with the project, with 9 conversions from cars/vans to e-bikes. In addition, the programme built valuable relationships with a much wider range of e-cargo bike delivery providers, resulting in one of the largest e-cargo bike logistics companies in the UK, Delivery Mates, creating its first microhub in the borough in 2023. In 2022, H&F won a £277,950 award from Defra to run a three year Parcels Not Pollution programme. This will continue to engage with local businesses as well as building further relations with logistics firms, both to encourage a bigger switch to e-cargo bikes and to significantly increase the uptake of e-cargo bike deliveries in the borough.</p> <p>As part of previous projects Clean Air Villages 2 and 3, The council worked with Zipcar, BIDs and Cross River Partnership to launch electric van services for small businesses in Fulham and</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>Shepherds Bush to reduce air pollution from local businesses. After external funding through Defra Air Quality Grant ended, the council agreed to fund this service for another year. Qualifying businesses can book the vehicles at this webpage Electrifying Fulham Businesses Zipcar.</p> <p>The Shepherds Bush van has 22 businesses using the van, 199 trips were made by these businesses in 2022. 3707 miles were driven in the van.</p> <p>In Fulham 17 businesses were involved in the scheme in 2022, 138 trips and 1833 miles were driven in the van.</p> <p>The 2 park royal vans that were supported by the council and Old Oak and Park Royal Development Company, were available free of charge to qualifying businesses between April-December 2022 and currently still available free of charge. 409 trips were taken, 10221 miles, 13 businesses signed up to use the vans.</p> <p>H&F were successful in their joint bid with other London Boroughs and Business Improvement Districts (BIDs) for DEFRA funding round 2020-21 for CAV4., submitted by Cross River Partnership. This was an expansion on Clean Air Village 1,2 and 3 Projects - engagement and behavioural change project to reduce emissions from the delivery of goods and services for businesses, hospitals and communities. Clean Air Villages 4 - Cross River Partnership This project ran until summer 2022 and the final report is available at the website Defra-Air-Quality-Grant-Scheme-202021-CAV4-Summary-Report-Final.pdf (crossriverpartnership.org).</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>Portobello Brewing based in Hammersmith and Fulham were given EV dongles to use for a period of time and analysis was completed to provide guidance and information to the company about if they changed their vehicles from diesel to Electric. The EVSA (electric vehicle suitability assessment) tool showed that they would financially & environmentally benefit from switching these 4 vehicles to EVs.</p> <p>The council were successful in their joint bid with other London Boroughs and Business Improvement Districts (BIDs) for DEFRA funding round 2021-22 for the CALL project (Clean Air Logistics for London), in Hammersmith and Fulham planning work was completed to install a delivery locker and cargo bike stands at Chelsea Harbour Pier. Chelsea Harbour Pier Site Visit - Cross River Partnership.</p>
8	Public Health and awareness raising	<p>Reducing Emissions at its source</p> <p>Seek to reduce emissions from badly maintained vehicles</p>	<p>Our Civil Enforcement Officers (CEOs) enforce idling vehicles as part of their daily routine. Generally, they would usually advise the driver to stop idling as a warning; however, if the driver refuses, a penalty charge notice (PCN) will be issued.</p> <p>In 2022, Community enforcement officers served 5 notices for idling and 197 complaints were received regarding idling.</p>
9	Public Health and awareness raising	<p>Reducing Emissions at its source</p> <p>Encourage more environmentally friendly driving behaviour</p>	<p>A minimum of 600 anti-idling signs were erected around the borough in 2019. All schools in the borough now have anti-idling signage. The amount of signs at each school is dependent on how many roads around it would allow waiting/parking. Signs were not placed where a school</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>borders an A road with no wait/no load at any time restrictions are in force, because traffic are not allowed to stop there anyway.</p> <p>The Council has continued progress in addressing speeding concerns across the borough and we have in 2022, as a part of our efforts to improve road safety and promote sustainable modes of travel, expanded 20mph speed limit across the whole borough. There is now a boroughwide 20mph speed limit on all roads/streets in the borough, with the exception of Transport for London operated roads which include the A40, A4 and West Cross Route A3320.</p> <p>Work also continues on reviewing compliance at locations where there has been high exceedance of the speed limit and where there is a continuing record of collisions. Plans are ongoing for the conversion of speed “cushions” to more effective sinusoidal humps where suitable, and the consideration of traffic calming measures following interest or requests received from residents.</p>
10	Emissions from developments and buildings	<p>Reducing Emissions at its source</p> <p>Seek a reduction in emissions of small particles from construction sites</p>	<p>The Council continues to require demolition and construction management plans for major development sites, including the submission of an AQDMP (Air Quality Dust Management Plan) that includes a dust risk assessment as well as measures to minimise dust emissions and are required to follow the London Mayor’s “The Control of Dust and Emissions During Construction and Demolition’ SPG, 2014.and the ‘London Code of Construction Practice 2022’ These include the requirements to meet NRMM criteria.</p> <p>The council was awarded Defra air quality grant funding for a bid submitted for round 20/21 for “Development of a borough wide construction site monitoring website” that has been developed</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>2021-23, this will assist council officers in ensuring emissions from construction sites are controlled within the limits set by planning conditions on new developments in the construction phase.</p> <p>The noise and nuisance Team received 51 complaints relating to dust from building sites/construction works. This is a reduction of around 40% compared with last year. This is likely due to residents spending less time at home without the Covid restrictions of 2021, combined with the noise response service now being able to visit, respond and deal with any complaints more effectively than in 2021.</p> <p>The Council were part of the MAQF3 NRMM compliance project during 2022: 27 sites were registered on the NRMM website; 16 site Audits were undertaken, 4 sites were self-compliant, 5 sites worked towards and achieved Compliance. 1 site failed to achieve compliance; 1 was a completed site; and 5 sites were found to have no NRMM. The London Borough Hammersmith & Fulham achieved a total Compliance status of 90% of those sites audited under the NRMM project.</p> <p>The council participated in the MAQF3 NRMM compliance project for the three-year period from 2019 to 2022. The NRMM audit programme will continue into 2023/24, funded by MAQF and Hammersmith and Fulham Council.</p>
11	Emissions from developments and buildings	<p>Reducing Emissions at its source</p> <p>Seek a reduction in emissions from domestic and commercial properties</p>	<p>Policy CC1 of the Local Plan requires sustainable energy measures to be included in major developments and encourages these measures in all other developments. Minimising energy use helps to not only reduce CO₂ emissions from buildings but also other pollutants as well. On-site renewable energy use is also promoted in new developments and the most frequent</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints 												
			<p>technology deployed is PV panels and heat pumps which generate no local emissions. Use of Combined Heat and Power (CHP) units are only accepted where they can be used without having an unacceptable impact on air quality.</p> <p>Less residual waste produced per household results in less waste to be collected and less waste incinerated. Christmas tree recycling for 2022/2023 was 96.74 tonnes. The council also started collecting food waste from selected streets from November 2020, 461,760 kg was collected January 2022 – March 2023.</p> <p>In 2022 energy efficiency and insulation measures were implemented in 129 Hammersmith and Fulham homes through Groundwork's Green Doctor Comfort programme as detailed below:</p> <table border="1" data-bbox="949 836 1637 1362"> <tbody> <tr> <td data-bbox="949 836 1373 919">Light bulbs provided</td> <td data-bbox="1373 836 1637 919">381</td> </tr> <tr> <td data-bbox="949 919 1373 1002">Power-down devices provided</td> <td data-bbox="1373 919 1637 1002">81</td> </tr> <tr> <td data-bbox="949 1002 1373 1085">Radiator panels provided</td> <td data-bbox="1373 1002 1637 1085">244</td> </tr> <tr> <td data-bbox="949 1085 1373 1168">Draught proofing - doors provided</td> <td data-bbox="1373 1085 1637 1168">27</td> </tr> <tr> <td data-bbox="949 1168 1373 1289">Draught proofing - windows provided</td> <td data-bbox="1373 1168 1637 1289">17</td> </tr> <tr> <td data-bbox="949 1289 1373 1362">Shower heads provided</td> <td data-bbox="1373 1289 1637 1362">13</td> </tr> </tbody> </table>	Light bulbs provided	381	Power-down devices provided	81	Radiator panels provided	244	Draught proofing - doors provided	27	Draught proofing - windows provided	17	Shower heads provided	13
Light bulbs provided	381														
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Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints 						
			<table border="1" data-bbox="952 375 1639 614"> <tr> <td data-bbox="952 375 1373 454">Save-a-flush bags provided</td> <td data-bbox="1373 375 1639 454">2</td> </tr> <tr> <td data-bbox="952 454 1373 534">Shower timers provided</td> <td data-bbox="1373 454 1639 534">21</td> </tr> <tr> <td data-bbox="952 534 1373 614">Swivel taps provided</td> <td data-bbox="1373 534 1639 614">3</td> </tr> </table> <p data-bbox="936 635 2074 751">In 2022 there have been 24 bonfire or barbeque smoke complaints these were addressed by the Council's Environmental Health team and provide an opportunity for the council to engage with residents on the issue of air quality.</p> <p data-bbox="936 788 1971 863">The Facilities Management decarbonisation program has been going well. This includes installation of a heat pump at Macbeth Annex.</p> <p data-bbox="936 900 2029 1016">Total of 10 sites have now been converted to LED lighting with a carbon saving of 43.5kg per annum. A further 4 sites are proposed to be converted by June 2023. Works are further considered with roof and insulation retrofit for the next year moving forward.</p> <p data-bbox="936 1053 2058 1219">Corporate facilities management has signed a deal with Stark international for installation and management of its automatic meter readers. Gas AMRs programme had been delayed, New programme is underway being completed by April 2023. The current round of electric AMRs will be completed by June 2023.</p>	Save-a-flush bags provided	2	Shower timers provided	21	Swivel taps provided	3
Save-a-flush bags provided	2								
Shower timers provided	21								
Swivel taps provided	3								

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			<p>Work has started as well with collaborative working with other London councils in a joint power purchase agreement with an energy generator but is yet early days in form of first carrying out appraisals of various routes and options.</p> <p>Planning permission was granted September 2022 for the council to build 134 energy efficient homes.</p> <p>Communal hybrid heat pumps were also installed in two of the borough's housing estates.</p>
12	Monitoring and other core statutory duties	<p>Reducing Emissions at its source</p> <p>Seek to control and minimise emissions from industrial premises</p>	<p>Regulation duties continued in line with the LAPPC requirements.</p>
13	Cleaner Transport	<p>Reducing the Need to Travel</p> <p>Sustain and improve town & local centres, facilities and employment areas</p>	<p>The 2018 Local Plan is still in place and policies that sustain and improve town centres continue to be implemented to help provide facilities locally. This discourages the need for people to travel for shopping, entertainment and recreation purposes etc. The council review of its Planning Guidance SPD in 2021 resulted in development of a separate Climate Change SPD throughout 2022 which will be consulted on in Spring/Summer 2023.</p> <p>Clean Air Neighbourhoods Programme approved by cabinet 10th October 2022. The programme “will seek to improve the health of residents through a range of measures and public realm area improvements, including new trees, greening, sustainable drainage systems, pedestrian safety improvements, cycling facilities and traffic access restrictions. It will repurpose street space to be</p>

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			<p>used by the community for play streets, community theatre and resident-led events such as street parties. As part of the broader effort to improve air quality, further measures to tackle energy use and heating demand will also be brought forward</p> <p>An experimental programme of traffic restrictions will play a key role in achieving Clean Air Neighbourhoods by discouraging out-of-borough traffic from adding to air pollution by using our streets simply to pass through the borough rather than, for example, visit friends or family or make deliveries.”</p> <p>Current Clean Air Neighbourhoods are South Fulham and South Fulham (West).</p> <p>The C9 Cycleway has been completed and the scheme made permanent from Goldhawk Road in the west (boundary with LB Hounslow) to Hammersmith Road in the east. The cycleway continues to Olympia (boundary with RBKC) with wands but is yet to be fully segregated. The total length of the C9 cycleway is 2,721 metres. The council is in the design phase for the C34 from Scrubs Lane/jct with Du Cane Road along Wood Lane to Shepherd's Bush Green. This will provide approximately 1.35kms of fully-segregated cycleway. Construction is due to begin in Spring 2024 and complete in Spring 2025.</p>
14	Emissions from developments and buildings	<p>Reducing the Need to Travel</p> <p>Seek to reduce the air quality impact of new development</p>	<p>Transport planners continue to ensure suitable Construction Logistic Plan conditions are placed on developments.</p> <p>The 2018 Local Plan is still in place and policies that help reduce the need to travel and promote sustainable forms of transport are still being implemented to help reduce emissions. It is also worth noting that the council’s approach on reducing CO₂ emissions helps improve the air quality</p>

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			<p>impacts of new developments by encouraging use of on-site renewable energy generation such as heat pumps and solar power. These reduce reliance on gas combustion based systems, reducing local emissions. Some developments are starting to install electric boilers instead of gas fired boilers which also helps to reduce emissions and improve local air quality.</p> <p>A new Climate Change SPD has been drafted throughout 2022 and this will be consulted on in Spring/Summer 2023. This includes chapters on Transport and Air Quality issues and highlights measures that can be implemented to mitigate both CO₂ and other pollutants.</p> <p>In 2022 as detailed in section 3 of the ASR the following number of sites were required to implement air quality mitigation via the development control process: 234 development sites with Ventilation strategy to reduce indoor exposure to poor air quality, 614 sites with zero emission plant , 57 sites with Air Quality Dust Management Plan (AQDMP) with stage IV NRMM emission standards (instead of the standard Stage IIIB, a greater London requirement) and the use of ULEZ compliant vehicles, 71 sites with Low Emission Strategies, 1 sites with stricter diesel emergency generator emission standards. There were also 11 conditions recommended for green barriers and 64 conditions for aerobic food digestors. There were 63 conditions placed for electric charging points. As part of the development process when planning applications are submitted the council transport planners secure in line with London Plan policies T5 and T6: car free developments where possible; adequate electric vehicle charging infrastructure; car club spaces; sufficient cycle parking and improvements to cycle infrastructure; improvements to walking infrastructure; and travel plans for developments which will generate significant trips such as new schools and residential areas. Construction logistics plans and delivery and</p>

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			<p>servicing plans are secured for developments that generate significant freight movements, produced in line with Transport for London guidance. Facilities can be required to minimise additional freight trips from missed developments to reduce the impact of online retailing. Additionally, facilities to enable micro consolidation will be considered for larger developments to promote sustainable last mile deliveries.</p>
15	Cleaner Transport	<p>Encouraging a Switch to Less Polluting Forms of Transport</p> <p>Promotion of bus services</p>	<p>Hammersmith and Fulham submitted robust response to the TfL bus review in 2022, and alerted residents to the proposed changes to bus services. Hammersmith and Fulham routes were retained.</p>
16	Cleaner Transport	<p>Encouraging a Switch to Less Polluting Forms of Transport</p> <p>Promotion of other forms of public transport</p>	<p>Car free party on King street was held on 16th October 2022, providing the opportunity for residents to learn about the borough's electric scooters, bikes and cargo bikes.</p> <p>The council has successfully implemented an E-scooter trial in the borough, one of only 10 London boroughs to do so. Electric scooter rental trial - Transport for London (tfl.gov.uk)</p> <p>The number of trips made in London between January 2022 and end of March 2023 was over 1,750 thousand. The average distance travelled by e-scooters between the same period ranged from 2-2.8km. Average trip duration was between 12-18 minutes during this period. There were 4,490 rental e-scooters across this London scheme at the end of March 2023.</p> <p>To ensure e-bikes and e scooters will no obstruct narrow pavements or cycle, 26 e-scooter parking bays have been developed in the borough and 75 parking bays for dockless hire cycles.</p>

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			<p>Residents were consulted regarding a possible public space protection order to prohibit these along the Thames Path. More e-bikes hit the streets of H&F LBHF</p> <p>There are three electric dockless bike rental companies operating in the borough, Dott, Human Forest and Lime.</p> <p>The council worked with Tier for Clean Air Day 16th June 2022. Hammersmith Council twitter account shared the discount code CLEANAIR which allowed users to get free 2x unlocks and 20minutes to try their e-scooters or e-bikes. The code was valid between 16 June and 17 July. There were 39 redemptions of the code, which was active between 22 June – 18 July (but only promoted around Clean Air Day)</p>
17	Cleaner Transport	<p>Encouraging a Switch to Less Polluting Forms of Transport</p> <p>Promotion of cycling</p>	<p>The Council maintains a waiting list for cycle stands and hangers and looks for funding opportunities to install these.</p> <p>In total the Council's Dr Bike mechanics worked on 1,185 residents' bikes over 2022/23. The council ran Dr Bikes 48 Saturdays across the year from 10am-3pm in parks including Ravenscourt and Normand as well as Furnivall Gardens, outside the Riverside Studios and on Lyric Square. We averaged about 15 bikes per session. We also ran weekend Dr Bikes at events including road closures on North End Road, King Street and Wandsworth Bridge Road. Further, we introduced regular weekly Dr Bikes from midday-2.30pm outside the LBHF temporary offices at 3 Shortlands every Tuesday, outside the Nourish Hub for the first 3 Wednesdays of the month and inside West London Welcome refugee centre in Baron's Court on the 4th Wednesday of every month. We averaged between 5-8 bikes at each event. We also introduced monthly Dr Bikes at Imperial</p>

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			<p>College White City, and the NHS Imperial Trust Hospitals - Charing Cross, Hammersmith Hospital and St Marys - in which we averaged between 15-20 bikes per session.</p> <p>Clean air Neighbourhoods Programme was approved by cabinet 10th October 2022. The programme “will seek to improve the health of residents through a range of measures and public realm area improvements, including new trees, greening, sustainable drainage systems, pedestrian safety improvements, cycling facilities and traffic access restrictions. It will repurpose street space to be used by the community for play streets, community theatre and resident-led events such as street parties. As part of the broader effort to improve air quality, further measures to tackle energy use and heating demand will also be brought forward. An experimental programme of traffic restrictions will play a key role in achieving Clean Air Neighbourhoods by discouraging out-of-borough traffic from adding to air pollution by using our streets simply to pass through the borough rather than, for example, visit friends or family or make deliveries.”</p> <p>Current Clean Air Neighbourhoods are South Fulham and South Fulham (West). Our CLEAN schemes support walking and the use of more green and active travel</p> <p>Car free party on King street was held on 16th October 2022, providing the opportunity for residents to learn about the borough’s electric scooters, bikes and cargo bikes.</p> <p>The C9 Cycleway has been completed and the scheme made permanent from Goldhawk Road in the west (boundary with LB Hounslow) to Hammersmith Road in the east. The cycleway continues to Olympia (boundary with RBKC) with wands but is yet to be fully segregated. The</p>

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			<p>total length of the C9 cycleway is 2,721 metres . We are in design phase for the C34 from Scrubs Lane/jct with Du Cane Road along Wood Lane to Shepherd's Bush Green. This will provide approximately 1.35kms of fully-segregated cycleway. Construction is due to begin in Spring 2024 and complete in Spring 2025.</p> <p>Try before you bike scheme still available for residents, the purchasing scheme saw 18 bikes sold in 2022/23, up from three bikes in 21/22.</p> <p>H&F has three electric cargo bikes for residents and local residents to borrow at a heavily subsidised rate on the North End Road. They are hosted by three businesses - a bike shop (Cycle Junxion), a florist (Becky Blooms) and a Middle Eastern cafe (Jaffa House). Over 22/23, 169 trips were taken. Users cycled 449 kms and the bikes were used for 440 hours. The most used trike is the one hosted by Cycle Junxion. The other two trikes are due to be moved in 23/24, one to King Street on the popular C9 cycleway and the other to Wandsworth Bridge Road where the Residents' Association has specifically asked for one. We anticipate a significant increase in usage of the trikes once they have been moved.</p> <p>As part of the MAQF CABB (Clean Air Better Business) project in 2018 an air quality and journey planner widget to promote active travel was produced for the H & F and can found on the Council website Air quality forecast and cleaner air route finder LBHF. The page had 105 unique page/ 139 page views in 2022.</p>

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			<p>Cargo bikes were used by FM Conway in the borough at the Hammersmith bridge stabilisation project, to transport vital materials and PPE from Mandela Way Depot to Hammersmith Bridge. The trip is a 16.6mile round trip, which saves 16.22kgCO₂e per trip.</p> <p>A new tool was developed for the council's report it webpage, to allow people to notify the council when hire bikes are not parked correctly. The feedback provided through the new council tool will be sent directly to the selected operator, ensuring fast and easy removal of pavement obstructions when and where needed. Dumped e-bike? Help us keep pavements clear by reporting it LBHF</p> <p>Just over 1,100 secondary school pupils received Bikeability training in our pilot Widening Participation Fund programme. H&F has received funding to restart the programme in September 2023. 648 primary school children received Levels 1 & 2 Bikeability. 455 Adults & families received cycle training.</p> <p>A new cycle hub was opened under the Hammersmith flyover on the 16th October 2022 It will be free for residents and commuters to use for the first year. It provides safe and secure shelter for over 80 bikes, it has a full CCTV system linked to the Council's CCTV control room.</p>
18	Cleaner Transport	<p>Encouraging a Switch to Less Polluting Forms of Transport</p> <p>Promotion of Walking</p>	<p>Emissions-based charging for pay and display usage continues to lead to changes in behaviours, with more people walking and less people driving short journeys.</p> <p>Clean air Neighbourhoods Programme approved by cabinet 10th October 2022. The programme "will seek to improve the health of residents through a range of measures and public realm area improvements, including new trees, greening, sustainable drainage systems, pedestrian safety</p>

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			<p>improvements, cycling facilities and traffic access restrictions. It will repurpose street space to be used by the community for play streets, community theatre and resident-led events such as street parties. As part of the broader effort to improve air quality, further measures to tackle energy use and heating demand will also be brought forward. An experimental programme of traffic restrictions will play a key role in achieving Clean Air Neighbourhoods by discouraging out-of-borough traffic from adding to air pollution by using our streets simply to pass through the borough rather than, for example, visit friends or family or make deliveries.”</p> <p>Current Clean Air Neighbourhoods are South Fulham and South Fulham (West). Our CLEAN schemes supports walking and the use of more green and active travel</p> <p>As part of the MAQF CABB project in 2018 an air quality and journey planner widget to promote active travel was produced for the H&F and can be found on the Council website. (See webpage Air quality forecast and cleaner air route finder LBHF). The page had 105 unique page/ 139 page views in 2022.</p> <p>To help keep pavements clear and support walking, a new tool was developed for the council's report it webpage, to allow people to notify the council when hire bikes are not parked correctly. The feedback provided through the new council tool will be sent directly to the selected operator, ensuring fast and easy removal of pavement obstructions when and where needed.</p>
19	Public Health and awareness raising	Encouraging a Switch to Less Polluting Forms of	Just over 1,100 secondary school pupils received Bikeability training in our pilot Widening Participation Fund programme. H&F has received funding to restart the programme in September

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		<p>Encourage a reduction in car use for the journey to school</p>	<p>2023. 648 primary school children received Levels 1 & 2 Bikeability. 455 Adults & families received cycle training.</p> <p>Through the TfL STARS (Sustainable Travel: Active, Responsible, Safe) schools accreditation scheme: 18 schools are registered, 10 are gold accredited, 3 bronze accredited (one on track to receive silver), and 4 are engaged in the scheme (with 2 of these on track to be bronze accredited). This London scheme is for schools and nurseries and encourages pupils to travel to school by walking, cycling and scooting. It encourages physical activity and reduced car journeys, helping to reduce air pollution around school sites.</p> <p>Nine school air quality audits (SAQAs) were conducted in 2021-2022 and as a result of DEFRA funding a further 20 SAQA will be conducted 2023-2024 (prioritised in accordance with data from LAEI 2019).</p> <p>The council ran Dr Bikes 48 Saturdays across the year from 10am-3pm in parks including Ravenscourt and Normand as well as Furnivall Gardens, outside the Riverside Studios and on Lyric Square. We averaged about 15 bikes per session. We also ran weekend Dr Bikes at events including road closures on North End Road, King Street and Wandsworth Bridge Road. Further, we introduced regular weekly Dr Bikes from midday-2.30pm outside the LBHF temporary offices at 3 Shortlands every Tuesday, outside the Nourish Hub for the first 3 Wednesdays of the month and inside West London Welcome refugee centre in Baron's Court on the 4th Wednesday of every month. We averaged between 5-8 bikes at each event. We also introduced monthly Dr Bikes at</p>

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			<p>Imperial College White City, and the NHS Imperial Trust Hospitals - Charing Cross, Hammersmith Hospital and St Marys - in which we averaged between 15-20 bikes per session.</p> <p>Our Dr Bike mechanics worked on 1,185 residents' bikes over 2022/23</p>
20	Cleaner Transport	<p>Encouraging a Switch to Less Polluting Forms of Transport</p> <p>Encourage a reduction in car use for the journey to work and business trips</p>	<p>The C9 Cycleway has been completed and the scheme made permanent from Goldhawk Road in the west (boundary with LB Hounslow) to Hammersmith Road in the east. The cycleway continues to Olympia (boundary with RBKC) with wands but is yet to be fully segregated. The total length of the C9 cycleway is 2,721 metres. We are in design phase for the C34 from Scrubs Lane/jct with Du Cane Road along Wood Lane to Shepherd's Bush Green. This will provide approximately 1.35kms of fully-segregated cycleway. Construction is due to begin in Spring 2024 and complete in Spring 2025.</p> <p>As discussed in a previous action, E-scooter trial and e-bike trial currently occurring in the borough.</p> <p>As detailed in a previous action the Clean Air Neighbourhoods programme supports walking and the use of more green and active travel.</p>
21	Cleaner Transport	<p>Encouraging a Switch to Less Polluting Forms of Transport</p> <p>Control provision of on and off-street parking to deter</p>	<p>New emissions-based charging for pay and display was introduced in March 2023. This still includes a diesel surcharge of £1. The charges are shown at website 50% discount for business and trader permits were introduced for green vehicles, as well as free business permits for fully electric.</p>

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		car commuting into and within the borough	
22	Delivery Servicing and Freight	<p style="text-align: center;">Encouraging a Switch to Less Polluting Forms of Transport</p> <p style="text-align: center;">Encourage freight to be transported in a sustainable manner</p>	<p>DEFRA funded Clean Air Villages 3 (CAV3) project produced Ultra Low Emission Supplier Directories for Hammersmith Town Centre, Fulham Town Centre and Shepherds Bush Town Centre Clean Air Villages (crossriverpartnership.org). This is still available to refer to and directory of companies that offer ultra-low emission deliveries and services</p> <p>H&F were successful in their joint bid with other London Boroughs and Business Improvement Districts (BIDs) for DEFRA funding round 2020-21 for CAV4., submitted by Cross River Partnership. This was an expansion on Clean Air Village 1,2 and 3 Projects - engagement and behavioural change project to reduce emissions from the delivery of goods and services for businesses, hospitals and communities. Clean Air Villages 4 - Cross River Partnership This project ran until summer 2022 and the final report is available.</p> <p>Portobello Brewing based in Hammersmith and Fulham were given EV dongles to use for a period of time and analysis was completed to provide guidance and information to the company about if they changed their vehicles from diesel to Electric. The EVSA (electric vehicle suitability assessment) tool showed that they would financially & environmentally benefit from switching these 4 vehicles to EVs.</p> <p>In March 2022, the council was advised that its joint bid to the Defra Air Quality Grant was successful "Project to move freight to London by river rather than road and continue ongoing deliveries through fleet of zero emission electric vehicles, cargo bikes and walking. (Delivered</p>

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			<p>through Westminster Cross River Partnership in partnership with London Boroughs of Hammersmith & Fulham, Islington, Lambeth, Lewisham, Southwark, Wandsworth. Plus, Port of London Authority (PLA), Cadogan Estates, and The Fitzrovia Partnership)” The projects will be completed by June 2023. https://crossriverpartnership.org/projects/clean-air-logistics-for-london/</p> <p>In Hammersmith and Fulham, the project will deliver a sustainable deliveries hub at Chelsea Harbour Estate.</p> <p>In February 2023 it was announced that the council’s joint bid to Defra Air Quality Grant funding, Smarter Greener Logistics (SGL) led by Westminster City Council in collaboration with 24 project partners was successful and will be delivered July 2023- December 2024.</p> <p>Parcels not pollution scheme, an emissions free delivery service, which results from a partnership between Hammersmith and Fulham Council, Hammersmith BID, Transport for London and e-cargobikes continues to operate across the borough.</p> <p>Zero-emission Arts Markets continued to be held in the borough during 2022 Zero-emissions Arts Market - Hammersmith BID. All stalls and materials were delivered with zero-emissions and all stallholders will be supported by Parcels not Pollution, Hammersmith’s zero-emissions delivery service.</p>
23	Cleaner Transport	<p>Make a More Efficient Use of Road Transport</p> <p>Encourage car sharing</p>	<p>We are continuing to work with our car club operators to deliver cleaner, greener and smarter travel opportunities in the borough.</p>

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			<p>The free-floating car sharing (FFCS) scheme Zipcar Flex has been operating in the borough since 2020. Together with zip car Roundtrip. There were 17,905 Zipcar members at the end of March 2023 with a preferred Hammersmith and Fulham address.</p> <p>Total Flex and Roundtrip journeys between January 2022 and the end of March 23 were 157,893. 3,436,665 km travelled in total. Zipcar Flex and Roundtrip has 36 electric vehicles available in the borough.</p> <p>As well as Zip Car, the Council are also working with operators Enterprise, who deliver fixed car club schemes in the Borough. Enterprise has 11 vehicles currently in the borough, 4 of which are hybrid.</p> <p>To support future development of a fully electric car club fleet in the Borough, the council is also working directly with Enterprise and Liberty Charge to introduce 'Car Club Mobility Hubs' and convert all existing car club vehicles to electric.</p>
24	Cleaner Transport	<p>Make a More Efficient Use of Road Transport</p> <p>Discourage short journeys</p>	<p>We are supporting residents to complete short journeys by other means such as cycling and use of electric scooters.</p> <p>Rental E-cargo bikes and e-bikes also continue to be available in the borough.</p> <p>The C9 Cycleway has been completed and the scheme made permanent from Goldhawk Road in the west (boundary with LB Hounslow) to Hammersmith Road in the east. The cycleway continues to Olympia (boundary with RBKC) with wands but is yet to be fully segregated. The total length of the C9 cycleway is 2,721 metres. We are in design phase for the C34 from</p>

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			<p>Scrubs Lane/jct with Du Cane Road along Wood Lane to Shepherd's Bush Green. This will provide approximately 1.35kms of fully-segregated cycleway. Construction is due to begin in Spring 2024 and complete in Spring 2025.</p>
25	Cleaner Transport	<p style="text-align: center;">Other Measures to Reduce Road Traffic Emissions</p> <p>Reduce the amount of road traffic in residential areas and town centres</p>	<p>The 2018 Local Plan is still in place and policies that help reduce the need to travel and promote sustainable forms of transport are still being implemented to help reduce emissions.</p> <p>The council began a review of its Planning Guidance SPD in 2021 which resulted in development of a separate Climate Change SPD throughout 2022. This will be consulted on in Spring/Summer 2023. This includes chapters on Transport and Air Quality.</p> <p>Developments in areas well connected by public transport are expected to be car-free, with no parking provided, other than for disabled people. Where appropriate and in accordance with the aims of the London Plan the Council also encourages the provision of car club bays, especially those with restricted parking. Planning policies also require electric vehicle parking spaces for both residential and commercial uses – e.g. the requirement for residential developments is that a minimum of 20% of all spaces must be for electric vehicles and provide active charging facilities. Cycling and walking are also encouraged by planning policies which require improvements to the environment and provision of facilities such as cycle parking and provision of support for cycle hire schemes.</p> <p>Clean air Neighbourhoods Programme approved by cabinet 10th October 2022.</p> <p>The programme “will seek to improve the health of residents through a range of measures and public realm area improvements, including new trees, greening, sustainable drainage systems,</p>

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			<p>pedestrian safety improvements, cycling facilities and traffic access restrictions. It w Clean ill repurpose street space to be used by the community for play streets, community theatre and resident-led events such as street parties. As part of the broader effort to improve air quality, further measures to tackle energy use and heating demand will also be brought forward. An experimental programme of traffic restrictions will play a key role in achieving Clean Air Neighbourhoods by discouraging out-of-borough traffic from adding to air pollution by using our streets simply to pass through the borough rather than, for example, visit friends or family or make deliveries.”</p> <p>Current Clean Air Neighbourhoods are South Fulham and South Fulham (West).</p> <p>Our CLEAN schemes supports walking and the use of more green and active travel.</p>
26	Localised solutions	<p>Other Measures to Reduce Road Traffic Emissions</p> <p>Promote the use of trees to help improve local air quality</p>	<p>Two Tiny Forests were planted during 2022, which is 600 whips (1m or less in the form of saplings) in total, so there are now a total of three tiny forests in the borough at Hammersmith Park , Fulham’s Normand park and Eelbrook Common.</p> <p>In 2022/23 the council planted 241 trees on the public highway and felled 128 trees. For Parks, Open Spaces and Cemeteries in planting season 2022-2023, 400 whips were planted on Wormwood Scrubs and 100 whips on two other park sites. Four fruit trees were planted at Wendell Park and one fruit tree at Brook Green. Additionally, 400 linear metres of mixed native hedgerow were planted.</p>

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27	Localised solutions	<p>Other Measures to Reduce Road Traffic Emissions</p> <p>Reduce the amount of traffic on the A4 and A40</p>	<p>Work has continued on the Hammersmith SPD during 2022 and it is now expected to be consulted on before the end of 2023.</p>
28	Public health and awareness raising	<p>Raise Awareness of the Links Between Air Quality and Health</p> <p>Provide information to allow people to make informed choices about travel behaviour</p>	<p>The council continue to support airText and promote it to public on our website and at events. There were 31 additional subscribers to airText pollution alerts from January 2022. Subscribers receive alerts by text message (269 people) and voicemail (30 subscribers).</p>
29	Emissions from developments and buildings	<p>Provide information so people can make informed choices about reducing pollution from domestic activities</p>	<p>Air Quality Officers wrote an air pollution factsheet for public health Joint Strategic Needs Assessment for place webpages.</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
30	Monitoring and other core statutory duties	<p>Raise Awareness of the Links Between Air Quality and Health</p> <p>Continue to monitor air quality and make information available</p>	<p>Live access to the real time air quality monitoring stations is available on-line (See London Borough of Hammersmith & Fulham - Air Quality monitoring service (airqualityengland.co.uk)) and links to this are provided on the Council website (See Air quality LBHF).</p> <p>The council continued to maintain two automatic monitors and its network of diffusion tubes. Extensive planning work was undertaken in 2022 to install four additional automatic monitors, live monitoring results from all four new stations is expected by Summer 2023</p> <p>Further to the four Breathe London sensors in place 21/22, at Melcombe Primary School, Charing Cross Hospital and North End Road, there was rapid expansion of the council's Breathe London network in From September 22, with 47 additional Breathe London air quality sensors installed outside Hammersmith and Fulham state funded primary schools, Secondary Schools and also three Nursery Schools. Data from these air quality sensors is available to view live from Breathe London.</p> <p>Provisional data, downloaded from Breathe London for 2022 suggests:</p> <p>Annual Average NO₂ at Charing Cross hospital (The Breathe London Node is located on a wall near the entrance on Fulham Palace Road) was 21.93 µg m³ (21.10 µg m³ – 2021). Annual average PM_{2.5} at this location was 7.03 µg m³ (7.51 µg m³ – 2021).</p> <p>Nearby at Melcombe Primary school NO₂ was 33.41 µg m³ (35.15 µg m³ – 2021) and 8.89 µg m³ (8.47 µg m³- 2021) for annual average PM_{2.5}.</p>

Measure	LLAQM Action Matrix Theme	Action	<p style="text-align: center;">Progress</p> <ul style="list-style-type: none"> • Emissions/Concentration data <ul style="list-style-type: none"> • Benefits • Negative impacts / Complaints
			<p>Two other nodes are placed at 366 North end road (30.27 $\mu\text{g m}^3$ (32.29 $\mu\text{g m}^3$ – 2021) for NO_2 and for $\text{PM}_{2.5}$ 11.17 $\mu\text{g m}^3$ (11.81 $\mu\text{g m}^3$ – 2021) and for 316-321 North end road – NO_2 average was 34.79 $\mu\text{g m}^3$ (37.44 $\mu\text{g m}^3$ – 2021) for this period and for $\text{PM}_{2.5}$ 11.01 $\mu\text{g m}^3$ (11.47 $\mu\text{g m}^3$ – 2021)</p> <p>Note: (monitoring occurred late July through to end December 2021 at these 2 locations)</p> <p>The introduction of Vortex air quality monitors across the borough continued throughout the year, with a large mesh network of monitors installed.</p>

3. Planning Update and Other New Sources of Emissions

Table K. Planning requirements met by planning applications in Hammersmith and Fulham Council in 2022

Condition	Number
Number of planning applications where an air quality impact assessment was reviewed for air quality impacts	21
Number of planning applications required to monitor for construction dust	36
Number of CHPs/Biomass boilers refused on air quality grounds	0
Number of CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	0
Number of developments required to install Ultra-Low NO _x boilers	0
Number of developments where an AQ Neutral building and/or transport assessments undertaken	21
Number of developments where the AQ Neutral building and/or transport assessments not meeting the benchmark and so required to include additional mitigation	17
Number of planning applications with S106 agreements including other requirements to improve air quality	28
Number of planning applications with CIL payments that include a contribution to improve air quality	0
<p>NRMM: Central Activity Zone , Canary Wharf and Opportunity Areas</p> <p>Number of conditions related to NRMM included.</p> <p>Number of developments registered and compliant.</p> <p>Number of audits</p> <p>% of sites unregistered prior to audit</p> <p>Please include confirmation that you have checked that the development has been registered with the GLA through the relevant NRMM website and that all NRMM used on-site is compliant with Stage Stage IV of the Directive and/or exemptions to the policy.</p>	<p>6 conditions included</p> <p>6 registered and compliant</p>
<p>NRMM: Greater London (excluding Central Activity Zone, Canary Wharf and Opportunity Areas)</p> <p>Number of conditions related to NRMM included.</p> <p>Number of developments registered and compliant.</p> <p>Number of audits</p> <p>% of sites unregistered prior to audit</p> <p>Please include confirmation that you have checked that the development has been registered at www.nrmm.london and that all NRMM used on-site is compliant with Stage IIIB of the Directive and/or exemptions to the policy.</p>	<p>57 conditions requiring Stage IV compliance included</p> <p>9 registered and compliant</p> <p>16 Audits</p> <p>1 uncompliant and being chased.</p> <p>5 audits</p> <p>19% sites unregistered prior to audit</p>

Air Quality Officers review weekly lists of planning applications to ensure air quality conditions are requested on all relevant applications. In addition, consultation

requests are sent out to air quality officers from the council's planning department on major developments. Breach of air quality conditions would be investigated and enforced by planning enforcement officers.

3.1 New or significantly changed industrial or other sources

No new industrial or other sources identified in 2022.

4. Additional Activities to Improve Air Quality

4.1 London Borough of Hammersmith and Fulham Council Fleet

The Council has 23 fully electric fleet vehicles which represents approximately 38% of the fleet and a further 3% of the fleet is hybrid. The fleet includes an increase of 5 fully electric vehicles from 2021. From the end of 2022 vehicles coming to the end of their leases are now being replaced by electric vehicles, which will result in a greener fleet.

4.2 NRMM Enforcement Project

Hammersmith and Fulham Council will continue to support the NRMM Enforcement project in 2023 – 24.

4.2 Air Quality Alerts

Hammersmith and Fulham Council support *air*TEXT (<https://www.airtext.info/>).

Appendix A Details of Monitoring Site Quality QA/QC

A.1 Automatic Monitoring Sites

Data management and Local Site Operator (LSO) duties for Hammersmith & Fulham's automatic monitoring stations have been completed by Ricardo Energy and Environment since November 2017. All real-time data from the monitoring stations are independently collected and validated on a daily basis. A combination of automatic and manual checks is used to assess data, identify and diagnose potential equipment faults and adjust data to take account of calibration tests. Automatic overnight calibrations are supplemented with regular manual calibrations of analysers, every two weeks. The procedures used conform to the EU standards that are a requirement of the AURN.

All data is formally ratified and is available online by accessing the Air quality in England (airqualityengland.co.uk) and selecting Hammersmith & Fulham within the 'Select local authority' menu bar. During this process the validation decisions can be ratified with the benefit of hindsight and using greater information, such as service records, calibration records and the results of station audits. Station audits are carried out Ricardo Energy and Environments in house audit team every six months.

PM₁₀ and PM_{2.5} Monitoring Adjustment

At Hammersmith Town Centre 'HF5', the equipment for monitoring PM is an unheated PM₁₀ BAM and a smart heated PM_{2.5} BAM. Therefore, the corrections set out in LLAQM TG19 for the MetOne BAM have been applied (sections 4.43 to 4.47) and the PM₁₀ data will be multiplied by 0.833 and no correction has been applied to the PM_{2.5} measurements.

Adjustment of the raw data is completed by Ricardo Energy and Environment through the current data management contract, therefore this is also true of any data that is presented on the Air Quality England website. Annualisation has been completed for PM₁₀ at this site as detailed below due to data capture being below 75%.

A.2 Diffusion Tubes

The diffusion tubes for January-December 2022 were supplied and analysed by UKAS accredited SOCOTEC, using the 50% Triethanolamine (TEA) in acetone preparation method. UKAS accredited laboratories follow the procedures set out by Defra within Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guidance for Laboratories and Users and have strict internal QA/QC procedures to ensure that concentrations reported are as accurate as possible. The laboratory precision results are available at the Defra webpages <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/precision-and-accuracy/>. In addition, SOCOTEC participates in the AIR-PT QA/QC scheme to ensure its performance is constantly independently reviewed, the results of which can be viewed at the webpage <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/qa-qc-framework/>.

The latest available AIR-PT result is AIR-PT AR050 (May – June 2022), in which SOCOTEC scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ± 2. Data from June 2022 onwards has not yet been made available.

Factor from Local Co-location Studies

Co-location studies are undertaken with Hammersmith and Fulham at two locations; Shepherd's Bush (HF4) and Hammersmith Town Centre (HF5). Annual means and bias for the respective sites are detailed in Table L. The locations are Roadside sites and co-location studies have been undertaken since 2018 for Shepherd's Bush and 2020 for Hammersmith Town Centre.

Table L. Precision of Co-location Studies

	Step 3a Local Bias Adjustment Input 1 Shepherd's Bush (HF4)	Step 3b Local Bias Adjustment Input 2 Hammersmith Town Centre (HF5)
Periods Used to Calculate Bias	11	9
Bias Adjustment Factor A	0.77 (0.7 - 0.85)	0.75 (0.69 - 0.83)
Diffusion Tube Bias B	30% (17% - 43%)	33% (20% - 45%)
Diffusion Tube Mean (µg m ⁻³)	46.5	61.7
Mean CV (Precision)	3.8%	8.2%
Automatic Mean (µg/m ³)	35.8	46.4
Data Capture	99%	98%
Adjusted Tube Mean (µg/m ³)	36 (33 - 40)	46 (43 - 51)

	Step 3a Local Bias Adjustment Input 1 Shepherd's Bush (HF4)	Step 3b Local Bias Adjustment Input 2 Hammersmith Town Centre (HF5)
Overall Diffusion Tube Precision	Good Overall Precision	Good Overall Precision
Overall Continuous Monitor Data Capture	Good Overall Data Capture	Poor Overall Data Capture
Combined Local Bias Adjustment Factor	0.76	

The overall bias adjustment factor from the borough's co-location studies was 0.76.

Discussion of Choice of Factor to Use

The national bias adjustment factor for SOCOTEC with the 50% Triethanolamine (TEA) in acetone preparation method was 0.76, taken from 26 co-location studies (database version 03/23). As the local and national bias adjustment factors were both 0.76, a factor of 0.76 was applied.

Table M. Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	Local and National Factor is the same	03/23	0.76
2021	National	03/22	0.78
2020	National	06/21	0.78
2019	Local – Shepherd's Bush		1.02
2018	Local – North Kensington		0.98
2017	Local – North Kensington		1.18
2016	Local – North Kensington		1.15
2015	Local – North Kensington		1.07

A.3 Adjustments to the Ratified Monitoring Data

Short-term to Long-term Data Adjustment

Where data capture is less than 75% and greater than 25% of a full calendar year, in accordance with LLAQM.TG(19), annualisation was undertaken. Recorded data capture was less than 75% at diffusion tubes HF04, HF24, HF53 and HF60 and therefore annualisation was undertaken as detailed in Table N.

PM₁₀ data capture at HF5 was below 75% as such annualisation has completed as detailed in Table O.

Distance Adjustment

Methodology detailed in LLAQM.TG(19) was used to estimate the concentration at the nearest receptor where the monitoring location is not representative of public exposure. Table P details the outputs of the NO₂ fall off with distance tool at automatic and non-automatic monitoring.

Table N. Short-Term to Long-Term Monitoring Data Adjustment (Diffusion Tubes)

Site ID	Annualisation Factor London N. Kensington	Annualisation Factor London Westminster	Annualisation Factor London Bloomsbury	Annualisation Factor Site 4	Average Annualisation Factor	Raw Data Annual Mean ($\mu\text{g m}^{-3}$)	Annualised Annual Mean ($\mu\text{g m}^{-3}$)	Comments
HF04	0.9339	0.8663	0.8487	-	0.8830	24.1	21.3	
HF24	1.1298	0.9751	0.9507	-	1.0185	31.7	32.3	
HF53	0.9775	0.8802	0.8878	-	0.9152	29.7	27.2	
HF60	0.9281	0.8417	0.8545	-	0.8748	51.2	44.8	

Table O. Short-Term to Long-Term Monitoring Data Adjustment (Automatic Monitoring – HF5 PM₁₀)

Site ID	Annual Mean 2022 (Am)	Period Mean 2022 (Pm)	Ratio (Am/Pm)
London N. Kensington	14.60	14.91	0.98
London Honor Oak Park	12.95	13.31	0.97
London Bloomsbury	16.63	16.84	0.99
Average			0.98

Table P. NO₂ Fall off With Distance Calculations

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted ($\mu\text{g m}^{-3}$))	Background Concentration ($\mu\text{g m}^{-3}$)	Concentration Predicted at Receptor ($\mu\text{g m}^{-3}$)	Comments
HF5	1.2	4.9	45.3	25.1	39.4	<i>Predicted concentration at Receptor within 10% the AQS objective.</i>
HF03	1.0	6.0	46.3	21.4	37.3	<i>Predicted concentration at Receptor within 10% the AQS objective.</i>
HF05	2.0	7.0	45.9	20.8	38.5	<i>Predicted concentration at Receptor within 10% the AQS objective.</i>
HF07	1.0	4.0	41.0	21.9	35.7	
HF16	1.0	6.0	42.2	27.0487	36.7	<i>Predicted concentration at Receptor within 10% the AQS objective.</i>
HF31	3.0	8.0	36.2	24.0655	33.1	
HF37	1.0	6.0	36.2	19.1	30.0	
HF39	1.0	6.0	39.2	29.8	35.8	
HF41, HF42, HF43	1.5	3.0	47.5	29.8	44.8	<i>Predicted concentration at Receptor above AQS objective.</i>
HF46	1.0	4.0	41.1	27.8	37.4	<i>Predicted concentration at Receptor within 10% the AQS objective.</i>
HF52	1.0	6.0	42.5	25.1	36.2	<i>Predicted concentration at Receptor within 10% the AQS objective.</i>

Appendix B Full Monthly Diffusion Tube Results for 2022

Table Q. NO₂ Diffusion Tube Results

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
HF01	75.3	75.3	44.2	24.9	34.3	23.5	19.5	16.3		17.4	23.8	25.3			25.2	19.2
HF02	75.3	75.3	53.0	29.6	36.9	27.0	29.4	26.1		28.4	34.0	29.3			32.3	24.6
HF03	75.3	75.3	73.6	55.2	68.1	51.1	57.8	55.3		65.3	67.2	58.8			60.9	46.3
HF04	49.2	49.2	37.0	23.0	30.1			15.3		22.9		21.8			24.5	16.3
HF05	82.4	82.4	62.1	40.7	55.4	51.9	45.9	43.0		58.1	51.4	46.4		49.4	50.1	38.1
HF06	90.4	90.4	29.7	31.0	43.6	37.1	34.3	26.1		36.7	36.0	31.4	36.9	37.8	34.4	26.2
HF07	90.4	90.4	71.6	47.4	56.6	49.2	48.4	43.9		56.9	56.9	52.9	52.0	61.5	53.9	41.0
HF08	82.7	82.7		20.1	29.5	19.3	16.6	13.5		18.4	18.9	19.3	24.4	18.6	19.7	15.0
HF09	90.4	90.4	52.8	33.3	49.9	27.8	28.3	25.1		35.1	35.9	33.4	38.7	41.9	36.0	27.4
HF10	82.7	82.7	42.9	26.8	39.9	24.8		18.1		23.2	26.3	25.9	31.7	35.3	29.0	22.1
HF11	83.2	83.2	70.6	49.5	63.9	57.2	52.8	43.0		56.8	51.3	48.6	50.1		54.0	41.0
HF12	82.7	82.7		23.3	35.1	23.5	19.3	15.2		23.9	24.4	23.3	28.4	33.9	24.7	18.8
HF13	74.7	74.7	37.0	20.5	40.1	30.6	20.3	18.4				20.0	28.1	30.9	27.0	20.5
HF14	90.4	90.4	58.4	39.7	46.0	32.3	39.1	34.9		39.5	39.6	39.3	40.7	26.1	39.4	30.0
HF15	90.4	90.4	27.1	24.0	33.8	27.1	20.1	15.7		28.5	27.1	17.3	29.1	28.7	25.0	19.0
HF16	90.4	90.4	64.4	50.3	63.9	40.7	57.1	54.4		63.0	58.1	52.6	53.8	57.4	55.5	42.2
HF17	90.4	90.4	46.3	26.7	35.2	26.2	23.4	18.7		29.4	25.6	28.2	28.9	29.6	28.6	21.7
HF18	71.2	71.2	48.9	35.2	30.1	29.1	30.1			34.8	31.1		33.8	35.0	34.0	25.9
HF19	90.4	90.4	47.5	46.4	49.4	36.9	42.0	34.4		41.6	43.9	37.6	43.3	49.4	42.5	32.3
HF20	90.4	90.4	42.1	24.1	34.3	22.1	17.9	14.5		19.7	20.9	19.6	28.5	29.4	24.4	18.6
HF21	90.4	90.4	52.8	44.1	46.3	37.5	44.5	40.0		49.0	49.6	45.7	46.6	59.5	-	-
HF22	59.9	59.9	49.8	44.8	45.6	36.9	46.8	35.6		44.4	49.2		49.0	61.2	-	-
HF23	80.8	80.8	55.1	43.6	49.3	36.9	41.9	36.3		43.3	48.3	48.6	47.2	57.5	46.1	35.0
HF24	90.4	90.4			44.4	29.4	28.5	26.4		32.8	31.0	31.4			31.7	24.5
HF25	90.4	90.4	34.9	23.5	30.0	20.6	18.5			21.7	21.1	17.2	30.5	27.4	24.3	18.4

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
HF26	90.4	90.4	41.5	25.1	37.8	22.7	18.8	14.6		22.8	25.5	23.5	25.9	33.9	26.1	19.9
HF27	90.4	90.4	47.3	36.3	45.8	32.2	31.4	24.5		36.0	35.9	35.7	36.3	43.0	36.3	27.6
HF28	90.4	90.4	38.6	34.7	48.0	36.1	31.5	28.2		37.0	34.1	29.2	38.0	36.9	35.3	26.9
HF29	90.4	90.4	60.7	40.6	47.5	35.0	40.7	34.1		42.2	39.1	44.6	45.3	46.7	42.9	32.6
HF30	90.4	90.4	51.8	27.0	35.8	25.4	21.9	18.0		26.7	27.8	24.3	32.0	35.2	29.2	22.2
HF31	90.4	90.4	57.4	42.6	60.1	49.7	38.7	32.2		56.2	54.5	39.1	45.5	52.9	47.6	36.2
HF32	90.4	90.4	41.5	34.7	38.3	23.2	25.1	19.3		26.8	28.3	29.2	37.2	35.5	30.4	23.1
HF33	82.7	82.7	45.3	32.3	35.4	26.6	26.9	22.5		34.0	30.9	24.8	32.7	34.3	31.0	23.5
HF34	82.7	82.7	39.8	26.0	32.8	14.7	16.9	14.7		20.1	23.3	24.4	29.3	31.8	24.4	18.6
HF35	90.4	90.4	49.4		48.2	35.6	30.7	29.1		39.0	31.2	29.5	33.7	30.1	35.3	26.8
HF36	82.7	82.7		29.9	52.4	41.8	27.5	27.1		53.7	38.3	27.5	37.8	35.5	36.7	27.9
HF37	90.4	90.4	72.2	41.5	59.5	38.6	31.1	37.4		46.2	51.7	48.7	48.5	52.9	47.6	36.2
HF38	90.4	90.4		23.7	35.2	21.8	19.4	16.1		24.0	26.9	24.3	27.7	35.8	25.1	19.1
HF39	90.4	90.4	73.1	41.5	62.7	46.6	49.5	42.5		61.2	48.3	47.0	47.6	52.8	51.5	39.2
HF40	90.4	90.4	21.4	23.8	32.2	22.2	18.4	16.4		22.1	24.3	23.6	29.3	30.3	23.8	18.1
HF41	90.4	90.4	75.3	47.1	84.5	63.8	50.7	48.9		87.7	62.9	51.8	53.0	45.1	-	-
HF42	72.0	72.0	77.0	47.6	77.8	61.4	49.6	49.5		84.2	60.2	52.2	53.0	49.2	-	-
HF43	82.7	82.7	80.7	52.7	94.7	62.8	58.3	56.1		86.5	74.6	63.2	59.0	58.3	62.5	47.5
HF44	90.4	90.4	51.0	30.0	39.9	29.6	25.7	22.5		30.8	30.9	28.9	32.0	39.9	32.4	24.6
HF45	82.7	82.7	46.8	32.1	52.4	28.5	25.5	21.0		30.2	30.0	30.5	36.5	38.3	33.3	25.3
HF46	90.4	90.4	73.0	49.8	68.7	46.8	54.6	45.6		59.6			51.9	40.0	54.0	41.1
HF47	90.4	90.4	48.2	38.5	42.9	28.6		22.0		34.3	33.7	36.5	35.9	29.3	34.6	26.3
HF48	90.4	90.4	64.1	47.4	52.7	38.6	35.9	29.7		3.0	42.5	40.5	40.6	47.2	40.3	30.6
HF49	66.5	66.5	53.2	73.2		38.0	28.7	24.4		40.4	37.6	35.9	38.7	40.9	40.5	30.8
HF50	75.3	75.3	44.5	26.0	40.8	24.6	24.0	23.2		28.8	37.6	32.5	36.9	35.6	32.0	24.3
HF51	90.4	90.4	58.8	33.0	49.2	34.9	28.8	29.0		35.2	35.7	32.2	38.5	37.1	37.1	28.2
HF52	90.4	90.4	72.9	51.1	61.6	47.4	53.6	50.4		59.6	55.4	54.7	55.7	56.4	55.9	42.5
HF53	82.7	82.7	46.2	29.0	45.0	26.9	23.0	19.5		24.8		27.0			29.7	20.7
HF54	90.4	90.4	42.8	23.8	32.4	21.5	19.1	16.8		18.4	26.3	22.3			24.6	18.7
HF55	90.4	90.4	44.3	12.7	34.2	21.1	19.9	18.5		22.2	25.6	25.7	29.4	33.7	25.8	19.6
HF56	56.6	56.6	51.9	30.8	51.1	27.6	24.4	23.6		33.8	32.2	35.0	37.3	37.3	34.6	26.3
HF57	75.3	75.3		24.4	38.1	29.6	22.8	20.8		30.7	30.1	24.7	32.6	34.0	28.5	21.7
HF58	75.3	75.3	42.0	23.4	32.3	19.7	17.7	17.3		21.9	21.8	24.3	29.2	31.5	25.2	19.2

Site ID	Valid data capture for monitoring period % ^(a)	Valid data capture 2022 % ^(b)	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data	Annual mean – bias adjusted
HF59	75.3	75.3	45.7	28.5	36.1	26.7	26.5	22.1		31.8	35.6	32.8	37.8	39.4	32.6	24.8
HF60	49.2	49.2			55.6	43.0	48.2			58.1		51.6	51.6	52.8	51.2	34.0

Notes

Concentrations are presented as $\mu\text{g m}^{-3}$.

Exceedances of the NO₂ annual mean AQO of 40 $\mu\text{g m}^{-3}$ are shown in **bold**.

NO₂ annual means in excess of 60 $\mu\text{g m}^{-3}$, indicating a potential exceedance of the NO₂ hourly mean AQS objective are shown in **bold and underlined**.

All means have been “annualised” in accordance with LLAQM Technical Guidance if valid data capture for the calendar year is less than 75% and greater than 25%.

(a) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(b) data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%).